

SECOND QUARTER 1995 GROUNDWATER SAMPLING REPORT

■ ■ ■ ■ ■ NL/TARACORP  
SUPERFUND SITE  
GRANITE CITY, ILLINOIS



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**QUARTERLY GROUNDWATER SAMPLING PROGRAM:  
SECOND QUARTER 1995 GROUNDWATER SAMPLING EVENT  
NL/TARACORP SUPERFUND SITE PREDESIGN FIELD INVESTIGATION**

1.0

**INTRODUCTION**

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The 1995 second quarter groundwater sampling event for the NL/Taracorp Superfund Site (NL Site), in Madison County, Illinois, was conducted as part of Work Order No. 0029 of Woodward-Clyde's (W-C) indefinite delivery contract with the United States Army Corps of Engineers, Omaha District (USACE) (Contract No. DACW45-93-D-0005).

The objective of the quarterly groundwater sampling program is to provide additional information on groundwater quality for the NL Site. The second quarter groundwater sampling event consisted of sampling monitoring wells which had been previously sampled as part of the Pre-design Field Investigation (PDFI), and the collection of representative samples from private wells located at 1443 Grand Street in Madison, Illinois. The groundwater samples were analyzed for the thirteen Target Analyte List (TAL) metals: antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, thallium, and zinc. The analytical results and field observations for this sampling event are included in this report.

**FIELD ACTIVITIES****2.1 SAMPLING PROCEDURES**

The 1995 second quarter groundwater sampling event was conducted by W-C personnel on June 14 through 20, 1995. The 16 active monitoring wells were purged and sampled. The sampling procedure for fifteen of the sixteen monitoring wells consisted of purging and sampling using a submersible electric pump. This sampling procedure was specified by the USEPA. For the other well, MW-108S, purging and sampling had to be completed using a bailer. Due to a low water level and slow recovery, this well could not be purged and sampled using a submersible pump.

Unfiltered samples were collected from the sixteen wells. Additionally, field filtered samples using a 45 micron size filter were collected from 11 wells that had previously yielded results that were above the MCLs or action levels for one or more of the constituents on the TAL.

Twelve of the wells which were sampled were constructed of two-inch I.D. PVC screens and risers and ranged from 20 to 35 feet in depth. The other three wells which were sampled were constructed of two-inch I.D. stainless steel screens and risers and were approximately 70 feet deep. A well information summary for the 1995 second quarter sampling event is included in **Table 1**.

Additionally, the USEPA had identified five private wells owned by the resident at 1442 Grand Street, and requested that W-C collect representative samples from these wells for analysis. These wells are maintained as a source of water for a lawn and garden. Two of the five wells were purged and unfiltered samples collected by W-C personnel on September 26, 1995.

Prior to initiating any intrusive activities at a well site, each member of the sampling team was outfitted in the required personal protective equipment (PPE) specified in the project Site Safety and Health Plan (SSH). The required PPE consisted of a polycoated Tyvek, latex undergloves, and neoprene outergloves. The well cover was unlocked or the flush-mount cover

the well casing. Conductivity and pH meters were calibrated with prepared standards before and after each sample was taken. All sampling equipment, including the stainless steel bailers was decontaminated prior to use. In accordance with CDAP SOP No. 6, the decontamination procedure consisted of a wash in Alconox soap, a tap water rinse, an alcohol rinse and a final deionized water rinse. The submersible pump was also decontaminated in this manner before and after each use.

Well MW-108S could not be purged or sampled with the submersible electric pump due to a low water level and a slow recovery. Instead, a 1½ inch diameter stainless steel bailer was used to purge and sample the well. A new length of clean nylon rope was attached to the bailer. After purging five well volumes from the well, both filtered and unfiltered samples were collected and the appropriate sample jars were filled for metals analysis. The bailer was decontaminated in accordance with CDAP SOP No. 6. The protective well cover was closed and locked.

For the two wells that were sampled at 1443 Grand Street, the existing pumps in each well were used to purge and sample the wells. The purge water was discharged onto the lawn.

For the remaining fifteen wells that were sampled, a submersible electric pump was used to purge the five well volumes. An electric generator was set up downwind from the well. A new length of nylon rope and Tygon tubing was attached to the pump assembly. This assembly was then lowered into the well after being connected to the pump power converter and generator. After the removal of five well volumes, the pumping rate was reduced to the minimum rate possible (approximately one liter/minute). Both unfiltered samples and, where required, filtered samples were collected, and the appropriate sample containers were filled. After the sampling was completed, the Tygon tubing, pump, and pump cable were removed from the well and decontaminated. The pump was placed in buckets containing Alconox soap, a tap water rinse, an alcohol rinse and a final deionized water rinse. Each of the decontamination solutions was run through the pump and all of the Tygon tubing prior to use at the next well. All purge water was placed in a 100 gallon wastewater tank to be disposed of on the Taracorp pile. The used rope and used PPE equipment were put into plastic trash bags for proper disposal.

If required, bottles for QA/QC were also filled. A separate jar was filled to measure field parameters (pH, conductivity, temperature, and water clarity). The sample jars were

decontaminated, dried, and labeled as specified in CDAP SOP No. 5. Samples were then packed in iced coolers to be maintained at a temperature of approximately 4 °C. Field sampling sheets were completed for each sample. Information on sampling sheets included the time of sampling, sampling team members initials, and required analysis.

At the end of each day of sampling, chain-of-custody forms were completed and the sample jars packed in iced coolers for delivery to Environmetrics Laboratory in St. Louis, Missouri. QA samples collected each day were packed in iced coolers and shipped to the USACE-MRD, in Omaha, Nebraska, via Federal Express priority overnight delivery.

## **2.2 LABORATORY METHODOLOGY AND QUALITY CONTROL**

Both the filtered and unfiltered groundwater samples collected from the NL Site were analyzed for the TAL Metals. Samples were analyzed in accordance with the PDFI CDAP and USEPA SW-846 procedures and protocols. Groundwater and QC sample analyses were conducted by Environmetrics Laboratory in St. Louis, Missouri, in accordance with the appropriate SOPs and the laboratory's QAPP. QA sample analyses were conducted at the USACE-MRD Laboratory.

The quality control level of effort for the groundwater investigation consisted of collecting and submitting the following samples to Environmetrics:

- 3 Field duplicates
- 1 MS/MSD per batch (2 MS/MSDs were performed by Environmetrics)
- 1 Equipment rinsate blank

The quality assurance level of effort for the groundwater investigation consisted of collecting and submitting the following samples to the USACE:

- 3 Field duplicates
- 1 MS/MSD
- 1 Equipment rinsate blank

The quality control and quality assurance levels of effort are summarized in **Table 2**.

The analytical method specific Data Quality Objectives (DQO's) for groundwater samples collected from the NL Site included precision, accuracy, and sensitivity criteria. The QA objective was to achieve the QC acceptance criteria required by the analytical protocols in SW-846. The initial validation of laboratory data was performed by Environmetrics. W-C conducted an independent assessment of the laboratory data packages. The independent assessment is presented with the attached analytical data in **Attachment 1**. The Chemical Quality Assurance Report prepared by the MRD Laboratory which summarizes the quality assurance testing is included in **Attachment 2**.

Corrective action was applied when any measurement system failed to follow the laboratory QAPP or CDAP Data Quality Objectives. The laboratory QA Supervisor reviewed the data generated to verify that all quality control samples were within the established control limits. Data generated with laboratory control samples that did not fall within control limits were considered suspect, and the sample analysis was repeated or sample results were reported with qualifiers if reanalysis was not possible.

Analytical data that was generated which fell within acceptable control limits were judged to be in control. Data generated which fell outside control limits are considered suspect and are reported with qualifiers. Data for all samples appear usable with only minor qualifications necessary.

**3.0****FIELD OBSERVATIONS**

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The depth to groundwater ranged from approximately two to four feet higher than that measured during the previous sampling event which was conducted during October, 1994. The higher groundwater elevations are attributed to the above average precipitation rates during the spring of 1995.

During this sampling event, the water in nine of the sixteen monitoring wells was generally clear. For three of the monitoring wells, MW-104, MW-107S, and MW-108S, the water appeared to be slightly cloudy to very cloudy and brown in color with trace of fine sand and silt. For MW-108D, the water appeared to be clear with a trace of silt. The poor water clarity and the sampling problems in the shallow wells (MW-104, MW-107S, and MW-108S) were probably the result of historically low water levels and slow recoveries that have not allowed them to be adequately developed.

The pH measurements for the wells sampled ranged from 5.7 to 7.0. Groundwater temperatures ranged from 11 to 27°C. Conductivities generally ranged from 500 to 2300  $\mu\text{mhos}/\text{cm}$ . These field parameters were similar to the parameters measured during the previous sampling events. A summary of field parameters measured during the sampling event is provided in Table 3.

**ANALYTICAL RESULTS - METALS**

Groundwater samples were analyzed for the 13 TAL metals: antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc. The analytical results for this sampling event are included in **Table 4** and historical results are included in **Table 5**. The laboratory data from this sampling event are included in **Attachment 1**. Also included in **Tables 4** and **5** are the maximum contaminant levels (MCLs) or action levels for each constituent promulgated under the Safe Drinking Water Act and the Illinois Groundwater Quality Standards for Class I: Potable Resource Groundwater.

For unfiltered samples, all metals of concern except for beryllium and silver were detected at concentration levels above the practical quantitation limits (PQLs) in at least one sample collected from the monitoring wells (**Table 4**). The PQL is defined as the lowest concentration of a given analyte that can be reliably achieved within the specified limits of accuracy and precision during routine laboratory operating conditions. Unfiltered samples from six monitoring wells had total lead concentrations greater than the USEPA action level of 0.015 mg/L, and greater than the Illinois Class I groundwater lead standard of 0.0075 mg/L. The six wells with their respective measured lead concentrations were:

| <u>Monitoring Well</u> | <u>Total Lead Results (mg/L)</u> |
|------------------------|----------------------------------|
| MW-104                 | 0.11                             |
| MW-104-92              | 0.186                            |
| MW-106S                | 0.177                            |
| MW-107S                | 0.0247                           |
| MW-107D                | 0.0172/0.028(dup.)               |
| MW-108S                | 0.73                             |

Additionally, two wells had total lead concentrations greater than the Illinois Class I groundwater standard of 0.0075 mg/L. The two wells with their respective measured lead concentrations were:

| <u>Monitoring Well</u> | <u>Total Lead Results (mg/L)</u> |
|------------------------|----------------------------------|
| MW-102                 | 0.0131                           |
| MW-105S                | 0.0128                           |

For filtered samples, cadmium, nickel, selenium, thallium, and zinc were detected at concentrations above the PQLs in at least one sample collected during this sampling event.

The wells sampled during the event which had metal concentrations that were above either the respective USEPA MCLs, Illinois Class I groundwater standards, or both, were wells MW-101, MW-102, MW-104, MW-104-92, MW-105S, MW-106S, MW-107S, MW-107D, MW-108S, and MW-108D (**Table 4**). The following summarizes which metals of concern were detected at levels above the standards for each well:

- MW-102: The lead concentration (unfiltered) was above the Illinois Class I standard.
- MW-104: The lead concentration (unfiltered) was above the Illinois Class I standard.
- MW-104-92: The lead concentration (unfiltered) was above the respective USEPA action level and Illinois Class I standard.
- MW-105S: The lead concentration (unfiltered) was above the Illinois Class I standard.
- MW-106S: The lead concentration (unfiltered) was above the respective USEPA action levels and the Illinois Class I standard.

- MW-107S: The lead concentration (unfiltered) was above the USEPA action level, and the Illinois Class I standard.
- MW-107D: The lead (unfiltered and unfiltered field duplicate) was above the above the respective USEPA action levels and the Illinois Class I standard.
- MW-108S: The arsenic (unfiltered), cadmium (filtered and unfiltered), lead (unfiltered), and nickel (filtered and unfiltered) concentrations were above the respective USEPA MCLs or action levels, and the Illinois Class I standards. The thallium concentrations (filtered and unfiltered) were above the respective USEPA MCL.
- MW-108D: The cadmium (filtered), and nickel (filtered and unfiltered) concentrations were above the respective USEPA MCLs or action levels, and the Illinois Class I standards.

For the two monitoring wells located upgradient of the Taracorp pile, MW-110 and MW-111-92, the results for the thirteen metals were at or below the PQL. The samples collected from MW-110 and MW-111-92 each detected arsenic above the PQL, but below the respective USEPA MCLs or Illinois Class I standards. The sample from MW-111-92 also detected lead at a level equal to the PQL (0.0009 mg/L). Quality control samples consisting of field duplicates were taken from MW-107D and MW-111. Constituent metal concentration levels for both duplicate samples were representative of the respective groundwater sample (**Table 4**).

The other two offsite wells that were sampled, Grand 1443-1 and Grand 1443-2, detected antimony, arsenic, lead, selenium, and thallium at levels that were above the PQLs, but below the respective USEPA MCLs and Illinois Class I groundwater standards.

Quality assurance samples consisting of field duplicates were taken from MW-104-92 and MW-108D. Analysis of QA samples was completed by the USACE MRD laboratory. The results of these QA samples are included in **Attachment 2**.

The USACE MRD laboratory noted only two data discrepancies between the Environmetrics data and the QA laboratory data. Both discrepancies were identified in sample WMW108-DOGGWQF:

- For Selenium, the result of the Environmetrics analysis was <0.0008 mg/L; the result of the USACE-MRD analysis was 3.0 µg/L (0.003mg/L).
- For Zinc, the result of the Environmetrics analysis was 2.3 mg/L; the result of the USACE-MRD analysis was 12.0 µg/L (0.012 mg/L).

Based on these comparisons, the USACE-MRD laboratory concluded that the Environmetrics data was acceptable. Only zinc was detected above the PQL for the QA rinsate sample, WMW112-10GGWT, with a concentration of 7 µg/L (0.007 mg/L).

The analytical results from each well for this sampling event were fairly consistent with the previous sampling events (**Table 5**). The differences in sample concentrations from one sampling event to the other may depend on various parameters including (1) sampling methods, (2) water level fluctuations, (3) soil permeability, (4) soil heterogeneity, and (5) dispersion and adsorption properties of the surrounding soils.

# **TABLES**

**TABLE 1**  
**WELL INFORMATION**  
 Second Quarter 1995 Groundwater Sampling Event  
 NL/Taracorp Superfund Site

| WELL NUMBER | MEASURED TOTAL DEPTH (FEET) | WELL DIAM. (IN.) | SCREEN INTERVAL (FEET) | SCREEN MATERIAL | RISER ELEV. (MSL) | WATER LEVEL (FEET) | WATER ELEVATION (FEET) | WELL VOLUME (GALS.) | PURGE VOLUME (GALS.) |
|-------------|-----------------------------|------------------|------------------------|-----------------|-------------------|--------------------|------------------------|---------------------|----------------------|
| 101         | 25.98                       | 2                | 15-25                  | PVC             | 421.45            | 16.21              | 405.24                 | 1.6                 | 8.0                  |
| 103         | BENT RISER                  | 2                | 15-25                  | PVC             | 417.17            | NA                 |                        |                     |                      |
| 104         | 28.33                       | 2                | 17-27                  | PVC             | 422.25            | 17.74              | 404.51                 | 1.7                 | 8.6                  |
| 105S        | 28.8                        | 2                | 21-26                  | PVC             | 428.66            | 24.23              | 404.43                 | 0.7                 | 3.7                  |
| 106S        | 22.84                       | 2                | 15.79-20.79            | PVC             | 423.71            | 19.25              | 404.46                 | 0.6                 | 2.9                  |
| 107S        | 24.10                       | 2                | 17.46-22.46            | PVC             | 420.78            | 11.49              | 409.29                 | 2.1                 | 10.3                 |
| 108S        | 23.4                        | 2                | 15.4-20.4              | PVC             | 421.71            | 18.94              | 402.77                 | 0.7                 | 3.6                  |
| 109         | 32.6                        | 2                | 29-34                  | PVC             | 416.64            | 11.30              | 405.34                 | 3.5                 | 17.4                 |
| 110         | 35                          | 2                | 30-35                  | PVC             | 418.49            | 15.37              | 403.12                 | 3.2                 | 16.0                 |
| GRAND1443-1 | 28 (approximate)            | 4                | Unknown                | SS (?)          | Unknown           | Unknown            | Unknown                | 9.0 (est.)          | 50.0                 |

TD = Total Depth

MW103-91 was located within the exclusion zone for soil stabilization activities on the industrial property and could not be sampled.

**TABLE 2**  
**GROUNDWATER SAMPLING SUMMARY**  
Second Quarter 1995 Groundwater Sampling Event  
NL/Taracorp Superfund Site

| WELL NUMBER   | FIELD SAMPLES * | QUALITY ASSURANCE |        |                | QUALITY CONTROL  |          |                |
|---------------|-----------------|-------------------|--------|----------------|------------------|----------|----------------|
|               |                 | FIELD DUPLICATE*  | MS/MSD | RINSATE BLANKS | FIELD DUPLICATE* | MS/MSD** | RINSATE BLANKS |
| 101           | 2               |                   |        |                |                  |          |                |
| 102           | 2               |                   |        |                |                  |          |                |
| 104-92        | 2               | 2                 | 1 / 1  |                |                  |          |                |
| 106S          | 2               |                   |        |                |                  |          |                |
| 107S          | 2               |                   |        |                |                  |          |                |
| 108S          | 2               |                   |        |                |                  |          |                |
| 109           | 1               |                   |        |                |                  |          |                |
| 110           | 1               |                   |        |                |                  | 1 / 1    |                |
| 112           |                 |                   |        | 1              |                  |          | 1              |
| GRAND1443-1   | 1               |                   |        |                |                  |          |                |
| Frequency (%) |                 | 11                | 4 / 4  | 4              | 11               | 8 / 8    | 4              |

\* Where two field samples or field duplicates are noted, both a field filtered and nonfiltered sample were collected.

\*\* Matrix Spike (MS)/ Matrix Spike Duplicate (MSD) samples were analyzed at a frequency of one sample per laboratory batch.

**TABLE 3**  
**FIELD PARAMETERS**  
**Second Quarter 1995 Groundwater Sampling Event**  
**NL/Taracorp Superfund Site**

| WELL ID     | SAMPLING DATE | pH   | CONDUCTIVITY ( $\mu\text{mhos}/\text{cm}$ ) | TEMP. (°C) | WATER CLARITY                |
|-------------|---------------|------|---|------------|------------------------------|
| MW-102      | 14-Jun-95     | 6.51 | 910   | 21.3       | Clear                        |
| MW-104      | 14-Jun-95     | 6.31 | 509   | 22.2       | Slightly Cloudy, Light brown |
| MW-105S     | 15-Jun-95     | 6.63 | 1250  | 21.9       | Clear                        |
| MW-106D     | 15-Jun-95     | 6.72 | 940   | 25.1       | Clear                        |
| MW-107D     | 16-Jun-95     | 6.7  | 960   | 27.4       | Clear                        |
| MW-108D     | 15-Jun-95     | 6.62 | 2380  | 25.9       | Clear w/ Trace Silt          |
| MW-109-92   | 16-Jun-95     | 6.72 | 1040  | 23.5       | Clear                        |
| MW-111-92   | 20-Jun-95     | 6.88 | 1080  | 26.7       | Clear                        |
| GRAND1443-1 | 26-Sep-95     | 6.54 | 960   | 11         | Clear                        |
| GRAND1443-2 | 26-Sep-95     | 7.03 | 700   | 18         | Clear                        |

NOTE: Water parameters were measured with a Horiba U-10 water quality meter.

**TABLE 4**  
**METALS RESULTS OF SECOND QUARTER 1995**  
**GROUNDWATER SAMPLING EVENT**  
**NL/TARACORP SUPERFUND SITE**

| Parameter | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS<br>(mg/L) | MW-101 MW-102 MW-104 MW-104-92 MW-105S MW-106S MW-106D MW-107S MW-107D |                       |                     |                      |                       |                      |         |                       |                       |
|-----------|------|----------------|--|--|-----------------------|---------------------|----------------------|-----------------------|----------------------|---------|-----------------------|-----------------------|
|           |      |                |  | MW-101   | MW-102                | MW-104              | MW-104-92            | MW-105S               | MW-106S              | MW-106D | MW-107S               | MW-107D               |
| Antimony  | mg/l | 0.006          | -  | <0.0014  | <0.0012               | 0.0034              | 0.0022               | 0.0052                | 0.0042               | <0.0012 | 0.0015                | 0.0025                |
| Arsenic   | mg/l | 0.05           | 0.05                                       | 0.0268   | 0.0034                | 0.0125              | 0.0021               | 0.0014                | 0.0067               | 0.0018  | 0.0053                | 0.002                 |
| Beryllium | mg/l | 0.004          | -  | <0.005   | <0.005                | <0.005              | <0.005               | <0.005                | <0.005               | <0.005  | <0.005                | <0.005                |
| Cadmium   | mg/l | 0.005          | 0.005                                      | <0.005   | <0.005                | <0.005              | <0.005               | <0.005                | <0.005               | <0.005  | <0.005                | <0.005                |
| Chromium  | mg/l | 0.1            | 0.1  | <0.010   | <0.010                | 0.011               | <0.010               | <0.010                | 0.019                | <0.010  | 0.045                 | 0.011                 |
| Copper    | mg/l | 1.3*           | 0.65                                       | <0.025   | <0.025                | <0.025              | <0.025               | <0.025                | <0.025               | <0.025  | 0.035                 | 0.035                 |
| Lead      | mg/l | 0.015*         | 0.0075                                     | 0.003  | 0.0131 <sup>(2)</sup> | 0.11 <sup>(3)</sup> | 0.186 <sup>(3)</sup> | 0.0128 <sup>(2)</sup> | 0.177 <sup>(3)</sup> | <0.0009 | 0.0247 <sup>(3)</sup> | 0.0172 <sup>(3)</sup> |
| Mercury   | mg/l | 0.002          | 0.002                                      | <0.0002  | <0.0002               | 0.0002              | <0.0002              | <0.0002               | <0.0002              | <0.0002 | 0.0002                | <0.0002               |
| Nickel    | mg/l | 0.1            | 0.1  | <0.040   | <0.040                | <0.040              | <0.040               | <0.040                | <0.040               | <0.040  | 0.067                 | <0.040                |
| Selenium  | mg/l | 0.05           | 0.05                                       | 0.0049   | 0.0063                | 0.0054              | <0.0008              | 0.005                 | 0.0061               | 0.0089  | 0.0061                | <0.0008               |
| Silver    | mg/l | -              | 0.05                                       | <0.010   | <0.010                | <0.010              | <0.010               | <0.010                | <0.010               | <0.010  | <0.010                | <0.010                |
| Thallium  | mg/l | 0.002          | -  | <0.0010  | <0.0010               | <0.001              | <0.001               | 0.0012                | <0.0010              | <0.0010 | <0.001                | <0.001                |
| Zinc      | mg/l | -              | 5.0  | 0.024  | 0.032                 | 0.039               | <0.020               | 0.025                 | 0.082                | <0.020  | 0.149                 | 0.061                 |

**TABLE 4**  
**METALS RESULTS OF SECOND QUARTER 1995**  
**GROUNDWATER SAMPLING EVENT**  
**NL/TARACORP SUPERFUND SITE**

| Parameter           | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS<br>(mg/L) | MW-107D<br>QC<br>FIELD<br>DUPLICATE |                       |                      |         |           |         |           | MW-11192<br>QC<br>FIELD<br>DUPLICATE | MW-112<br>QC<br>RINSATE<br>BLANK |
|---------------------|------|----------------|--|-------------------------------------|-----------------------|----------------------|---------|-----------|---------|-----------|--------------------------------------|----------------------------------|
|                     |      |                |  |                                     | MW-108S               | MW-108D              | MW-109  | MW-109-92 | MW-110  | MW-111-92 |                                      |                                  |
| Antimony            | mg/l | 0.006          | -  | 0.0018                              | 0.0028                | <0.0012              | <0.0012 | <0.0012   | <0.0012 | <0.0012   | <0.0012                              | <0.0012                          |
| Antimony, filtered  | mg/l | 0.006          | -  | 0.0018                              | 0.0021                | <0.0012              | <0.0012 | <0.0012   | <0.0012 | <0.0012   | <0.0012                              | <0.0012                          |
| Arsenic             | mg/l | 0.05           | 0.05                                       | 0.0102                              | 0.0892 <sup>(3)</sup> | 0.0032               | 0.0024  | 0.0012    | 0.0013  | 0.0012    | 0.0011                               | <0.0004                          |
| Arsenic, filtered   | mg/l | 0.05           | 0.05                                       | 0.0027                              | 0.0011                | <0.0012              | <0.0012 | <0.0012   | <0.0012 | <0.0012   | <0.0012                              | <0.0012                          |
| Beryllium           | mg/l | 0.004          | -  | <0.005                              | <0.005                | <0.005               | <0.005  | <0.005    | <0.005  | <0.005    | <0.005                               | <0.005                           |
| Beryllium, filtered | mg/l | 0.004          | -  | 0.0005                              | 0.0004                | <0.0005              | <0.0005 | <0.0005   | <0.0005 | <0.0005   | <0.0005                              | <0.0005                          |
| Cadmium             | mg/l | 0.005          | 0.005                                      | <0.005                              | 0.695 <sup>(3)</sup>  | 0.046 <sup>(3)</sup> | <0.005  | <0.005    | <0.005  | <0.005    | <0.005                               | <0.005                           |
| Cadmium, filtered   | mg/l | 0.005          | 0.005                                      | 0.0005                              | 0.016 <sup>(3)</sup>  | <0.0005              | <0.0005 | <0.0005   | <0.0005 | <0.0005   | <0.0005                              | <0.0005                          |
| Chromium            | mg/l | 0.1            | 0.1  | 0.014                               | 0.091                 | <0.010               | <0.010  | <0.010    | <0.010  | <0.010    | <0.010                               | <0.010                           |
| Chromium, filtered  | mg/l | 0.1            | 0.1  | 0.010                               | 0.010                 | <0.010               | <0.010  | <0.010    | <0.010  | <0.010    | <0.010                               | <0.010                           |
| Copper              | mg/l | 1.3*           | 0.65                                       | 0.032                               | 0.141                 | <0.025               | <0.025  | <0.025    | <0.025  | <0.025    | <0.025                               | <0.025                           |
| Copper, filtered    | mg/l | 1.3*           | 0.65                                       | 0.025                               | 0.122                 | <0.025               | <0.025  | <0.025    | <0.025  | <0.025    | <0.025                               | <0.025                           |
| Lead                | mg/l | 0.015*         | 0.0075                                     | 0.028 <sup>(3)</sup>                | 0.73 <sup>(3)</sup>   | 0.0011               | 0.0012  | <0.0009   | <0.0009 | 0.0009    | <0.0009                              | <0.0009                          |
| Lead, filtered      | mg/l | 0.015*         | 0.0075                                     | 0.0065                              | 0.0063                | <0.0009              | <0.0009 | <0.0009   | <0.0009 | <0.0009   | <0.0009                              | <0.0009                          |
| Mercury             | mg/l | 0.002          | 0.002                                      | <0.0002                             | 0.0004                | <0.0002              | <0.0002 | <0.0002   | <0.0002 | <0.0002   | <0.0002                              | <0.0002                          |
| Mercury, filtered   | mg/l | 0.002          | 0.002                                      | 0.0002                              | 0.0001                | <0.0002              | <0.0002 | <0.0002   | <0.0002 | <0.0002   | <0.0002                              | <0.0002                          |
| Nickel              | mg/l | 0.1            | 0.1  | <0.040                              | 0.284 <sup>(3)</sup>  | 0.137 <sup>(3)</sup> | <0.040  | <0.040    | <0.040  | <0.040    | <0.040                               | <0.040                           |
| Nickel, filtered    | mg/l | 0.1            | 0.1  | 0.040                               | 0.115                 | <0.040               | <0.040  | <0.040    | <0.040  | <0.040    | <0.040                               | <0.040                           |
| Selenium            | mg/l | 0.05           | 0.05                                       | <0.0008                             | <0.0008               | <0.0008              | <0.0004 | <0.0004   | <0.0004 | <0.0004   | <0.0004                              | 0.0009                           |
| Selenium, filtered  | mg/l | 0.05           | 0.05                                       | 0.0004                              | 0.0003                | <0.0008              | <0.0004 | <0.0004   | <0.0004 | <0.0004   | <0.0004                              | <0.0004                          |
| Silver              | mg/l | -              | 0.05                                       | <0.010                              | <0.010                | <0.010               | <0.010  | <0.010    | <0.010  | <0.010    | <0.010                               | <0.010                           |
| Silver, filtered    | mg/l | -              | 0.05                                       | 0.010                               | 0.010                 | <0.010               | <0.010  | <0.010    | <0.010  | <0.010    | <0.010                               | <0.010                           |
| Thallium            | mg/l | 0.002          | -  | <0.010                              | 0.464 <sup>(1)</sup>  | <0.0010              | <0.001  | <0.001    | <0.001  | <0.001    | <0.001                               | <0.001                           |
| Thallium, filtered  | mg/l | 0.002          | -  | 0.001                               | 0.005 <sup>(1)</sup>  | <0.0010              | <0.0010 | <0.0010   | <0.0010 | <0.0010   | <0.0010                              | <0.0010                          |
| Zinc                | mg/l | -              | 5.0  | 0.05                                | 1.01                  | 4.78                 | <0.020  | <0.020    | <0.021  | <0.020    | 0.03                                 | <0.020                           |
| Zinc, filtered      | mg/l | -              | 5.0  | 0.023                               | 0.533                 | 3.31                 | <0.020  | <0.020    | <0.021  | <0.020    | 0.03                                 | <0.020                           |

**TABLE 4**  
**METALS RESULTS OF SECOND QUARTER 1995**  
**GROUNDWATER SAMPLING EVENT**  
**NL/TARACORP SUPERFUND SITE**

| Parameter | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS | 1443<br>GRAND<br>WELL 1<br>(R. Clutts) | 1443<br>GRAND<br>WELL 2<br>(R. Clutts) |
|-----------|------|----------------|----------------------------------|--|--|
|           |      |                | (mg/L)                           |  |  |
| Antimony  | mg/l | 0.006          | -                                | 0.0015                                 | <0.0012                                |
| Arsenic   | mg/l | 0.05           | 0.05                             | 0.0023                                 | 0.0008                                 |
| Beryllium | mg/l | 0.004          | -                                | <0.005                                 | <0.005                                 |
| Cadmium   | mg/l | 0.005          | 0.005                            | <0.005                                 | <0.005                                 |
| Chromium  | mg/l | 0.1            | 0.1                              | <0.010                                 | <0.010                                 |
| Copper    | mg/l | 1.3*           | 0.65                             | <0.025                                 | <0.025                                 |
| Lead      | mg/l | 0.015*         | 0.0075                           | 0.005                                  | 0.0012                                 |
| Mercury   | mg/l | 0.002          | 0.002                            | <0.0002                                | <0.0002                                |
| Nickel    | mg/l | 0.1            | 0.1                              | <0.040                                 | <0.040                                 |
| Selenium  | mg/l | 0.05           | 0.05                             | 0.0021                                 | 0.0037                                 |
| Silver    | mg/l | -              | 0.05                             | <0.010                                 | <0.010                                 |
| Thallium  | mg/l | 0.002          | -                                | 0.001                                  | <0.001                                 |
| Zinc      | mg/l | -              | 5.0                              | <0.020                                 | <0.020                                 |

J - The associated numerical value is an estimated quantity.

UJ - The compound was analyzed for but was not detected.

The sample quantitation limit is an estimated quantity.

\* - Action Level that triggers treatment.

(1) - Sample concentration is above the MCL or action level.

(2) - Sample concentration is above the Illinois Groundwater Quality Standard for a Class I Potable Resource.

(3) - Sample concentrations is above both the MCL and the Class I Groundwater Quality Standard.

**TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS  
NL/TARACORP SUPERFUND SITE**

| Parameter | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS<br>(mg/L) | MW-101       |                 |               |                   |               |              |                 |              |
|-----------|------|----------------|--|--------------|-----------------|---------------|-------------------|---------------|--------------|-----------------|--------------|
|           |      |                |  | JULY<br>1992 | OCTOBER<br>1992 | MARCH<br>1993 | SEPTEMBER<br>1993 | APRIL<br>1994 | JULY<br>1994 | OCTOBER<br>1994 | JUNE<br>1995 |
| Antimony  | mg/l | 0.006          | -  | 0.014 (1)    | <0.011          | <0.060        | <0.050            | <0.006        | <0.006       | <0.006          | <0.0014      |
| Arsenic   | mg/l | 0.05           | 0.05                                       | 4.2 (3)      | 0.77 (3)        | 0.46 (3)      | 0.181 (3)         | 0.017         | 0.015        | 1.58(3)         | 0.268 (3)    |
| Beryllium | mg/l | 0.004          | -  | 0.0026       | <0.0006         | 0.0006        | <0.005            | <0.004        | <0.004       | <0.004          | <0.005       |
| Cadmium   | mg/l | 0.005          | 0.005                                      | 0.0039       | 0.0053 (3)      | <0.005        | 0.006 (3)         | <0.005        | <0.005       | 0.078(3)        | <0.005       |
| Chromium  | mg/l | 0.1            | 0.1  | 0.034        | 0.018 U         | 0.077         | 0.047             | <0.010        | 0.011        | 0.051           | <0.010       |
| Copper    | mg/l | 1.3*           | 0.65                                       | 0.06         | 0.017           | 0.039         | 0.063             | 0.072         | 0.058        | 0.048           | <0.025       |
| Lead      | mg/l | 0.015*         | 0.0075                                     | 0.130 (3)    | 0.023 (3)       | 0.027 (3)     | 0.077 (3)         | <0.003        | 0.008(2)     | 0.054(3)        | 0.003        |
| Mercury   | mg/l | 0.002          | 0.002                                      | 0.0002       | <0.0002         | <0.0002       | <0.0002           | <0.0002       | <0.0002      | <0.0002         | <0.0002      |
| Nickel    | mg/l | 0.1            | 0.1  | 0.13 (3)     | 0.027           | 0.077         | 0.072             | <0.040        | <0.040       | 0.154(3)        | <0.040       |
| Selenium  | mg/l | 0.05           | 0.05                                       | <0.003       | <0.003          | <0.003        | 0.007             | <0.005        | <0.005       | <0.005          | 0.0049       |
| Silver    | mg/l | -              | 0.05                                       | <0.0004      | <0.009          | <0.009        | <0.010            | <0.010        | <0.010       | <0.010          | <0.010       |
| Thallium  | mg/l | 0.002          | -  | <0.002       | <0.002          | <0.002        | <0.050            | <0.002        | 0.002        | <0.002          | <0.0010      |
| Zinc      | mg/l | -              | 5.0  | 0.35         | 0.098           | 0.11          | 0.199             | 0.052         | 0.068        | 0.246           | 0.024        |

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS  
NL/TARACORP SUPERFUND SITE

| Parameter | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS<br>(mg/L) | MW-102            |               |              |                 |              |
|-----------|------|----------------|--|-------------------|---------------|--------------|-----------------|--------------|
|           |      |                |  | SEPTEMBER<br>1993 | APRIL<br>1994 | JULY<br>1994 | OCTOBER<br>1994 | JUNE<br>1995 |
| Antimony  | mg/l | 0.006          | -  | <0.050            | <0.006        | <0.006       | <0.006          | <0.0012      |
| Arsenic   | mg/l | 0.05           | 0.05                                       | 0.015             | <0.010        | <0.010       | <0.010          | 0.0034       |
| Beryllium | mg/l | 0.004          | -  | <0.005            | <0.004        | <0.004       | <0.004          | <0.005       |
| Cadmium   | mg/l | 0.005          | 0.005                                      | <0.005            | <0.005        | <0.005       | <0.005          | <0.005       |
| Chromium  | mg/l | 0.1            | 0.1  | 0.027             | <0.010        | <0.010       | <0.010          | <0.010       |
| Copper    | mg/l | 1.3*           | 0.65                                       | 0.028             | <0.025        | 0.036        | <0.025          | <0.025       |
| Lead      | mg/l | 0.015*         | 0.0075                                     | 0.136 (3)         | <0.003        | <0.003       | 0.038(3)        | 0.0131 (2)   |
| Mercury   | mg/l | 0.002          | 0.002                                      | <0.0002           | <0.0002       | <0.0002      | <0.0002         | <0.0002      |
| Nickel    | mg/l | 0.1            | 0.1  | 0.062             | <0.040        | <0.040       | <0.040          | <0.040       |
| Selenium  | mg/l | 0.05           | 0.05                                       | 0.015             | <0.005        | <0.005       | <0.005          | 0.0063       |
| Silver    | mg/l | -              | 0.05                                       | <0.010            | <0.010        | <0.010       | <0.010          | <0.010       |
| Thallium  | mg/l | 0.002          | -  | <0.050            | <0.002        | <0.002       | <0.002          | <0.0010      |
| Zinc      | mg/l | -              | 5.0  | 0.123             | <0.020        | 0.031        | 0.028           | 0.032        |

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS  
NL/TARACORP SUPERFUND SITE

| Parameter | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS<br>(mg/L) | MW-103-91    |                 |               |                   |               |                 |
|-----------|------|----------------|--|--------------|-----------------|---------------|-------------------|---------------|-----------------|
|           |      |                |  | JULY<br>1992 | OCTOBER<br>1992 | MARCH<br>1993 | SEPTEMBER<br>1993 | APRIL<br>1994 | OCTOBER<br>1994 |
| Antimony  | mg/l | 0.006          | -  | <0.002       | 0.014 (1)       | <0.060        | <0.050            | <0.006        | <0.006          |
| Arsenic   | mg/l | 0.05           | 0.05                                       | <0.003       | <0.003          | <0.003        | <0.010            | <0.010        | <0.010          |
| Beryllium | mg/l | 0.004          | -  | <0.0006      | <0.0006         | <0.0006       | <0.005            | <0.004        | <0.004          |
| Cadmium   | mg/l | 0.005          | 0.005                                      | 0.0017       | <0.005          | <0.005        | <0.005            | 0.005         | <0.005          |
| Chromium  | mg/l | 0.1            | 0.1  | <0.002       | 0.029 U         | <0.013        | <0.010            | <0.010        | <0.010          |
| Copper    | mg/l | 1.3*           | 0.65                                       | <0.014       | <0.014          | <0.014        | <0.025            | <0.025        | <0.025          |
| Lead      | mg/l | 0.015*         | 0.0075                                     | 0.0027       | 0.0038          | <0.002        | <0.003            | <0.003        | <0.003          |
| Mercury   | mg/l | 0.002          | 0.002                                      | 0.0002       | <0.0002         | <0.0002       | <0.0002           | <0.0002       | <0.0002         |
| Nickel    | mg/l | 0.1            | 0.1  | <0.023       | <0.023          | <0.023        | <0.040            | <0.040        | <0.040          |
| Selenium  | mg/l | 0.05           | 0.05                                       | <0.003       | <0.003          | <0.003        | <0.005            | <0.005        | <0.005          |
| Silver    | mg/l | -              | 0.05                                       | <0.0004      | <0.009          | <0.009        | <0.010            | 0.012         | <0.010          |
| Thallium  | mg/l | 0.002          | -  | <0.002       | <0.002          | <0.002        | <0.050            | <0.002        | <0.002          |
| Zinc      | mg/l | -              | 5.0  | 0.036        | 0.074 J         | <0.020        | <0.020            | <0.020        | <0.020          |

**TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS  
NL/TARACORP SUPERFUND SITE**

| Parameter | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS<br>(mg/L) | MW-104       |                 |               |                   |               |              |                 |              |
|-----------|------|----------------|--|--------------|-----------------|---------------|-------------------|---------------|--------------|-----------------|--------------|
|           |      |                |  | JULY<br>1992 | OCTOBER<br>1992 | MARCH<br>1993 | SEPTEMBER<br>1993 | APRIL<br>1994 | JULY<br>1994 | OCTOBER<br>1994 | JUNE<br>1995 |
| Antimony  | mg/l | 0.006          | -  | 0.023 (1)    | 0.013 (1)       | <0.060        | <0.050            | <0.006        | <0.006       | <0.006          | 0.0034       |
| Arsenic   | mg/l | 0.05           | 0.05                                       | 0.086 (3)    | 0.087 (3)       | 0.0046        | 0.018             | <0.010        | <0.010       | <0.010          | 0.0125       |
| Beryllium | mg/l | 0.004          | -  | 0.0019       | 0.00322         | <0.0006       | <0.005            | <0.004        | <0.004       | <0.004          | <0.005       |
| Cadmium   | mg/l | 0.005          | 0.005                                      | 0.0027       | <0.005          | <0.005        | 0.005 (3)         | 0.006 (3)     | <0.005       | <0.005          | <0.005       |
| Chromium  | mg/l | 0.1            | 0.1  | 0.047        | 0.098 J         | <0.013        | 0.035             | <0.010        | 0.015        | 0.019           | 0.011        |
| Copper    | mg/l | 1.3*           | 0.65                                       | 0.064        | 0.097           | <0.014        | <0.025            | <0.025        | <0.025       | <0.025          | <0.025       |
| Lead      | mg/l | 0.015*         | 0.0075                                     | 0.47 (3)     | 0.42 (3)        | 0.013 (2)     | 0.043 (3)         | 0.019(3)      | 0.032(3)     | 0.091(3)        | 0.11 (2)     |
| Mercury   | mg/l | 0.002          | 0.002                                      | 0.0003       | 0.0005          | <0.0002       | <0.0002           | <0.0002       | <0.0002      | <0.0002         | 0.0002       |
| Nickel    | mg/l | 0.1            | 0.1  | 0.12 (3)     | 0.19 (3)        | <0.023        | 0.047             | <0.040        | <0.040       | 0.052           | <0.040       |
| Selenium  | mg/l | 0.05           | 0.05                                       | <0.003       | <0.003          | <0.003        | <0.005            | <0.005        | <0.005       | <0.005          | 0.0054       |
| Silver    | mg/l | -              | 0.05                                       | <0.0004      | <0.009          | <0.009        | <0.010            | <0.010        | <0.010       | <0.010          | <0.010       |
| Thallium  | mg/l | 0.002          | -  | <0.002       | <0.002          | <0.002        | <0.050            | <0.002        | <0.002       | <0.002          | <0.001       |
| Zinc      | mg/l | -              | 5.0  | 0.24         | 0.38 J          | <0.020        | 0.072             | <0.020        | 0.040        | 0.050           | 0.039        |

**TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS  
NL/TARACORP SUPERFUND SITE**

| Parameter | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS<br>(mg/L) | MW-104-92    |                 |               |                   |               |              |                 |              |
|-----------|------|----------------|--|--------------|-----------------|---------------|-------------------|---------------|--------------|-----------------|--------------|
|           |      |                |  | JULY<br>1992 | OCTOBER<br>1992 | MARCH<br>1993 | SEPTEMBER<br>1993 | APRIL<br>1994 | JULY<br>1994 | OCTOBER<br>1994 | JUNE<br>1995 |
| Antimony  | mg/l | 0.006          | -  | 0.007 (1)    | 0.01 (1)        | <0.060        | <0.050            | <0.006        | <0.006       | <0.006          | 0.0022       |
| Arsenic   | mg/l | 0.05           | 0.05                                       | 0.0088       | 0.0032          | <0.003        | <0.010            | <0.010        | <0.010       | <0.010          | 0.0021       |
| Beryllium | mg/l | 0.004          | -  | <0.0006      | <0.0006         | <0.0006       | <0.005            | <0.004        | <0.004       | <0.004          | <0.005       |
| Cadmium   | mg/l | 0.005          | 0.005                                      | 0.0033       | <0.005          | <0.005        | 0.005 (3)         | <0.005        | <0.005       | <0.005          | <0.005       |
| Chromium  | mg/l | 0.1            | 0.1  | 0.002        | 0.034 J         | <0.013        | <0.010            | <0.010        | <0.010       | <0.010          | <0.010       |
| Copper    | mg/l | 1.3*           | 0.65                                       | <0.014       | <0.014          | <0.014        | <0.025            | <0.025        | <0.025       | 0.047           | <0.025       |
| Lead      | mg/l | 0.015*         | 0.0075                                     | 0.44 (3)     | 0.27 (3)        | 0.043 (3)     | 0.520/0.480 (3)   | 0.036(3)      | 0.054(3)     | 0.090(3)        | 0.186 (3)    |
| Mercury   | mg/l | 0.002          | 0.002                                      | <0.0002      | <0.0002         | <0.0002       | <0.0002           | <0.0002       | <0.0002      | <0.0002         | <0.0002      |
| Nickel    | mg/l | 0.1            | 0.1  | <0.023       | <0.023          | <0.023        | <0.040            | <0.040        | <0.040       | <0.040          | <0.040       |
| Selenium  | mg/l | 0.05           | 0.05                                       | <0.003       | <0.003          | <0.003        | <0.005            | <0.005        | <0.005       | <0.005          | <0.0008      |
| Silver    | mg/l | -              | 0.05                                       | <0.0004      | <0.009          | <0.009        | <0.010            | <0.010        | <0.010       | <0.010          | <0.010       |
| Thallium  | mg/l | 0.002          | -  | <0.002       | <0.002          | <0.002        | <0.050            | <0.002        | <0.002       | <0.002          | <0.001       |
| Zinc      | mg/l | -              | 5.0  | 0.082        | 0.066 J         | <0.020        | 0.037             | <0.020        | 0.020        | <0.020          | <0.020       |

**TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS  
NL/TARACORP SUPERFUND SITE**

| Parameter | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS<br>(mg/L) | MW-105S           |               |              |                 |              | MW-106S           |               |              |              |
|-----------|------|----------------|--|-------------------|---------------|--------------|-----------------|--------------|-------------------|---------------|--------------|--------------|
|           |      |                |  | SEPTEMBER<br>1993 | APRIL<br>1994 | JULY<br>1994 | OCTOBER<br>1994 | JUNE<br>1995 | SEPTEMBER<br>1993 | APRIL<br>1994 | JULY<br>1994 | JUNE<br>1995 |
| Antimony  | mg/l | 0.006          | -  | <0.050            | <0.006        | <0.006       | <0.006          | 0.0052       | <0.050            | 0.008 (1)     | <0.006       | 0.0042       |
| Arsenic   | mg/l | 0.05           | 0.05                                       | <0.010            | <0.010        | <0.010       | 0.029           | 0.0014       | 0.014             | 0.081 (3)     | 0.043        | 0.0067       |
| Beryllium | mg/l | 0.004          | -  | <0.005            | <0.004        | <0.004       | <0.004          | <0.005       | <0.005            | 0.007 (1)     | 0.006(1)     | <0.005       |
| Cadmium   | mg/l | 0.005          | 0.005                                      | <0.005            | <0.005        | <0.005       | 0.017(3)        | <0.005       | <0.005            | 0.005         | 0.008(3)     | <0.005       |
| Chromium  | mg/l | 0.1            | 0.1  | 0.029             | <0.010        | 0.026        | 0.118(3)        | <0.010       | 0.476 (3)         | 0.183 (3)     | 0.137(3)     | 0.019        |
| Copper    | mg/l | 1.3*           | 0.65                                       | <0.025            | <0.025        | <0.025       | 0.055           | <0.025       | 0.056             | 0.179         | 0.16         | <0.025       |
| Lead      | mg/l | 0.015*         | 0.0075                                     | 0.015 (3)         | 0.008 (2)     | 0.035(3)     | 0.149(3)        | 0.0128 (2)   | 0.143 (3)         | 0.776 (3)     | 0.269(3)     | 0.177 (3)    |
| Mercury   | mg/l | 0.002          | 0.002                                      | <0.0002           | <0.0002       | <0.0002      | <0.0002         | <0.0002      | <0.0002           | 0.0006 (3)    | 0.0003       | <0.0002      |
| Nickel    | mg/l | 0.1            | 0.1  | <0.040            | <0.040        | <0.040       | 0.122(3)        | <0.040       | 0.366 (3)         | 0.22 (3)      | 0.208(3)     | <0.040       |
| Selenium  | mg/l | 0.05           | 0.05                                       | 0.016             | 0.011         | <0.005       | <0.005          | 0.005        | 0.011             | <0.005        | <0.005       | 0.0061       |
| Silver    | mg/l | -              | 0.05                                       | <0.010            | <0.010        | <0.010       | <0.010          | <0.010       | <0.010            | <0.010        | <0.010       | <0.010       |
| Thallium  | mg/l | 0.002          | -  | <0.050            | <0.002        | <0.002       | <0.002          | 0.0012       | <0.050            | 0.003 (1)     | 0.003 (1)    | <0.0010      |
| Zinc      | mg/l | -              | 5.0  | 0.039             | <0.020        | 0.045        | 0.360           | 0.025        | 0.181             | 0.876         | 0.671        | 0.082        |

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS  
NL/TARACORP SUPERFUND SITE

| Parameter | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS<br>(mg/L) | MW-106D      |                 |               |                   |               |              |                 |              |
|-----------|------|----------------|--|--------------|-----------------|---------------|-------------------|---------------|--------------|-----------------|--------------|
|           |      |                |  | JULY<br>1992 | OCTOBER<br>1992 | MARCH<br>1993 | SEPTEMBER<br>1993 | APRIL<br>1994 | JULY<br>1994 | OCTOBER<br>1994 | JUNE<br>1995 |
| Antimony  | mg/l | 0.006          | -  | 0.003        | <0.011          | <0.060        | <0.050            | <0.006        | <0.006       | <0.006          | <0.0012      |
| Arsenic   | mg/l | 0.05           | 0.05                                       | 0.013        | 0.0032          | <0.003        | <0.010            | <0.010        | <0.010       | <0.010          | 0.0018       |
| Beryllium | mg/l | 0.004          | -  | <0.0006      | <0.0006         | <0.0006       | <0.005            | <0.004        | <0.004       | <0.004          | <0.005       |
| Cadmium   | mg/l | 0.005          | 0.005                                      | 0.0005       | <0.005          | <0.005        | <0.005            | <0.005        | <0.005       | <0.005          | <0.005       |
| Chromium  | mg/l | 0.1            | 0.1  | <0.002       | 0.015 U         | <0.013        | 0.019             | <0.010        | <0.010       | <0.010          | <0.010       |
| Copper    | mg/l | 1.3*           | 0.65                                       | <0.014       | <0.014          | <0.014        | <0.025            | <0.025        | 0.063        | <0.025          | <0.025       |
| Lead      | mg/l | 0.015*         | 0.0075                                     | 0.019 (3)    | 0.019 (3)       | <0.002        | <0.003            | <0.003        | 0.012 (2)    | <0.003          | <0.0009      |
| Mercury   | mg/l | 0.002          | 0.002                                      | <0.0002      | <0.0002         | <0.0002       | <0.0002           | <0.0002       | <0.0002      | <0.0002         | <0.0002      |
| Nickel    | mg/l | 0.1            | 0.1  | <0.023       | 0.026           | <0.023        | <0.040            | <0.040        | <0.040       | <0.040          | <0.040       |
| Selenium  | mg/l | 0.05           | 0.05                                       | 0.0077       | 0.01            | 0.0098        | 0.013             | 0.005 J       | 0.008        | 0.006           | 0.0089       |
| Silver    | mg/l | 0.03           | 0.03                                       | <0.0004      | <0.009          | <0.009        | <0.010            | <0.010        | <0.010       | <0.010          | <0.010       |
| Thallium  | mg/l | 0.002          | -  | <0.002       | <0.002          | <0.002        | <0.050            | <0.002        | <0.002       | <0.002          | <0.001       |
| Zinc      | mg/l | -              | 5.0  | <0.020       | 0.067           | <0.020        | <0.020            | 0.026         | 0.041        | <0.020          | <0.020       |

**TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS  
NL/TARACORP SUPERFUND SITE**

| Parameter | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS<br>(mg/L) | MW-107S      |                 |               |                   |               |              |                 |              |
|-----------|------|----------------|--|--------------|-----------------|---------------|-------------------|---------------|--------------|-----------------|--------------|
|           |      |                |  | JULY<br>1992 | OCTOBER<br>1992 | MARCH<br>1993 | SEPTEMBER<br>1993 | APRIL<br>1994 | JULY<br>1994 | OCTOBER<br>1994 | JUNE<br>1995 |
| Antimony  | mg/l | 0.006          | -  | 0.008 (1)    | <0.011          | <0.060        | <0.050            | <0.006        | <0.006       | <0.006          | 0.0015       |
| Arsenic   | mg/l | 0.05           | 0.05                                       | 0.044        | 0.10 (3)        | 0.026         | <0.010            | <0.010        | 0.032        | 0.093(3)        | 0.0053       |
| Beryllium | mg/l | 0.004          | -  | 0.002        | 0.0079 (1)      | 0.0019        | <0.005            | <0.004        | <0.004       | 0.006(1)        | <0.005       |
| Cadmium   | mg/l | 0.005          | 0.005                                      | 0.0032       | 0.010 (3)       | <0.005        | <0.005            | <0.005        | 0.006(3)     | 0.029(3)        | <0.005       |
| Chromium  | mg/l | 0.1            | 0.1  | 0.042        | 0.35 J (3)      | 0.061         | 0.014             | 0.017         | 0.270(3)     | 0.142(3)        | 0.045        |
| Copper    | mg/l | 1.3*           | 0.65                                       | 0.064        | 0.3             | 0.066         | <0.025            | <0.025        | 0.116        | 0.222           | 0.035        |
| Lead      | mg/l | 0.015*         | 0.0075                                     | 0.14 (3)     | 0.52 (3)        | 0.087 (3)     | 0.047 (3)         | 0.007         | 0.077(3)     | 0.176(3)        | 0.0247 (3)   |
| Mercury   | mg/l | 0.002          | 0.002                                      | <0.0002      | 0.0006          | <0.0002       | <0.0002           | <0.0002       | 0.0018       | 0.0004          | 0.0002       |
| Nickel    | mg/l | 0.1            | 0.1  | 0.11 (3)     | 0.43 (3)        | 0.092         | <0.040            | <0.040        | 0.257(3)     | 0.280(3)        | 0.067        |
| Selenium  | mg/l | 0.05           | 0.05                                       | <0.003       | <0.003          | <0.003        | 0.011             | <0.005        | <0.005       | 0.010           | 0.0061       |
| Silver    | mg/l | -              | 0.05                                       | <0.0004      | <0.009          | <0.009        | <0.010            | <0.010        | <0.010       | <0.010          | <0.010       |
| Thallium  | mg/l | 0.002          | -  | <0.002       | <0.002          | <0.002        | <0.050            | <0.002        | <0.002       | <0.002          | <0.001       |
| Zinc      | mg/l | -              | 5.0  | 0.25         | 0.86            | 0.18          | 0.084             | 0.041         | 0.282        | 0.59            | 0.149        |

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS  
NL/TARACORP SUPERFUND SITE

| Parameter     | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS<br>(mg/L) | MW-107D      |                 |               |                   |               |              |                 |              |
|---------------|------|----------------|--|--------------|-----------------|---------------|-------------------|---------------|--------------|-----------------|--------------|
|               |      |                |  | JULY<br>1992 | OCTOBER<br>1992 | MARCH<br>1993 | SEPTEMBER<br>1993 | APRIL<br>1994 | JULY<br>1994 | OCTOBER<br>1994 | JUNE<br>1995 |
| Antimony      | mg/l | 0.006          | -  | 0.005        | <0.011          | <0.060        | <0.050            | <0.006        | 0.006 U      | <0.006          | 0.0025       |
| Arsenic       | mg/l | 0.05           | 0.05                                       | 0.065 (3)    | 0.04            | 0.024         | <0.010            | <0.010        | <0.010       | <0.010          | 0.002        |
| Beryllium     | mg/l | 0.004          | -  | 0.0016       | 0.0017          | 0.0006        | <0.005            | <0.004        | <0.004       | <0.004          | <0.005       |
| Cadmium       | mg/l | 0.005          | 0.005                                      | 0.0018       | <0.005          | <0.005        | <0.005            | <0.005        | <0.005       | <0.005          | <0.005       |
| Chromium      | mg/l | 0.1            | 0.1  | 0.044        | 0.067 J         | 0.078         | 0.076             | <0.010        | 0.118(3)     | 0.113(3)        | 0.011        |
| Copper        | mg/l | 1.3*           | 0.65                                       | 0.052        | 0.054           | 0.027         | <0.025            | <0.025        | <0.025       | 0.100           | 0.035        |
| Lead          | mg/l | 0.015*         | 0.0075                                     | 0.11 (3)     | 0.12 (3)        | 0.067 (3)     | <0.003            | <0.003        | 0.006        | 0.015(2)        | 0.0172 (3)   |
| Mercury       | mg/l | 0.002          | 0.002                                      | <0.0002      | 0.0002          | <0.0002       | <0.0002           | <0.0002       | 0.0010 J     | <0.0002         | <0.0002      |
| Nickel        | mg/l | 0.1            | 0.1  | 0.054        | 0.057           | 0.045         | <0.040            | <0.040        | 0.092        | 0.086           | <0.040       |
| Selenium      | mg/l | 0.05           | 0.05                                       | <0.003       | <0.003          | <0.003        | <0.005            | <0.005        | 0.005 U      | <0.005          | <0.0008      |
| Silver        | mg/l | -              | 0.05                                       | <0.0004      | <0.009          | <0.009        | <0.010            | <0.010        | <0.010       | <0.010 UJ       | <0.010       |
| Thallium      | mg/l | 0.002          | -  | <0.002       | <0.002          | <0.002        | <0.050            | <0.002        | <0.002       | <0.002          | <0.001       |
| Zinc          | mg/l | -              | 5.0  | 0.22         | 0.25            | 0.091         | 0.05              | <0.020        | 0.042        | 0.054           | 0.061        |
| Zinc indirect | mg/l | -              | >0   |              |                 |               |                   |               |              |                 |              |

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS  
NL/TARACORP SUPERFUND SITE

| Parameter | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS<br>(mg/L) | MW-107D<br>QC FIELD<br>DUPLICATE |              |                 |              |
|-----------|------|----------------|--|----------------------------------|--------------|-----------------|--------------|
|           |      |                |  | APRIL<br>1994                    | JULY<br>1994 | OCTOBER<br>1994 | JUNE<br>1995 |
| Antimony  | mg/l | 0.006          | -  | <0.006                           | <0.006       | <0.006          | 0.0018       |
| Boron     | mg/l | 0.002          | -  | <0.002                           | <0.002       | <0.002          | 0.001        |
| Arsenic   | mg/l | 0.05           | 0.05                                       | <0.010                           | <0.010       | <0.010          | 0.0102       |
| Beryllium | mg/l | 0.004          | -  | <0.004                           | <0.004       | <0.004          | <0.005       |
| Boron     | mg/l | 0.002          | -  | <0.002                           | <0.002       | <0.002          | 0.001        |
| Cadmium   | mg/l | 0.005          | 0.005                                      | <0.005                           | <0.005       | 0.006(3)        | <0.005       |
| Chromium  | mg/l | 0.1            | 0.1  | <0.010                           | 0.158(3)     | 0.062           | 0.014        |
| Copper    | mg/l | 1.3*           | 0.65                                       | <0.025                           | <0.025       | 0.253           | 0.032        |
| Lead      | mg/l | 0.015*         | 0.0075                                     | <0.003                           | 0.006        | 0.093(3)        | 0.028 (3)    |
| Mercury   | mg/l | 0.002          | 0.002                                      | <0.0002                          | 0.0012       | <0.0002         | <0.0002      |
| Nickel    | mg/l | 0.1            | 0.1  | <0.040                           | 0.116(3)     | 0.067           | <0.040       |
| Selenium  | mg/l | 0.05           | 0.05                                       | <0.005                           | <0.005       | <0.005          | <0.0008      |
| Silver    | mg/l | -              | 0.05                                       | <0.010                           | <0.010       | <0.010          | <0.010       |
| Thallium  | mg/l | 0.002          | -  | <0.002                           | <0.002       | <0.002          | <0.010       |
| Zinc      | mg/l | -              | 5.0  | <0.020                           | 0.032        | 0.189           | 0.05         |

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS  
NL/TARACORP SUPERFUND SITE

| Parameter | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS<br>(mg/L) | MW-108S           |               |              |                 |              |
|-----------|------|----------------|--|-------------------|---------------|--------------|-----------------|--------------|
|           |      |                |  | SEPTEMBER<br>1993 | APRIL<br>1994 | JULY<br>1994 | OCTOBER<br>1994 | JUNE<br>1995 |
| Antimony  | mg/l | 0.006          | -  | <0.050            | 0.007 (1)     | <0.006       | 0.010(1)        | 0.0028       |
| Arsenic   | mg/l | 0.05           | 0.05                                       | 0.109 (3)         | 0.017         | 0.025        | 0.091(3)        | 0.0892 (3)   |
| Beryllium | mg/l | 0.004          | -  | <0.005            | <0.004        | <0.004       | <0.004          | <0.005       |
| Cadmium   | mg/l | 0.005          | 0.005                                      | 0.475 (3)         | 0.180 (3)     | 0.225(3)     | 0.963(3)        | 0.695 (3)    |
| Chromium  | mg/l | 0.1            | 0.1  | 0.082             | 0.043         | 1.35(3)      | 0.318(3)        | 0.091        |
| Copper    | mg/l | 1.3*           | 0.65                                       | 0.092             | 0.039         | 0.140        | 0.108           | 0.141        |
| Lead      | mg/l | 0.015*         | 0.0075                                     | 1.02 (3)          | 0.312 (3)     | 0.246(3)     | 1.17(3)         | 0.73 (3)     |
| Mercury   | mg/l | 0.002          | 0.002                                      | <0.0002           | <0.0002       | 0.0015       | 0.0003          | 0.0004       |
| Nickel    | mg/l | 0.1            | 0.1  | 0.254 (3)         | 0.075         | 0.980(3)     | 0.492(3)        | 0.284 (3)    |
| Selenium  | mg/l | 0.05           | 0.05                                       | <0.005            | <0.005        | <0.005       | <0.005          | <0.0008      |
| Silver    | mg/l | -              | 0.05                                       | <0.010            | <0.010        | <0.010       | <0.010          | <0.010       |
| Thallium  | mg/l | 0.002          | -  | 0.07 (1)          | 0.008 (1)     | 0.011(1)     | 0.018(1)        | 0.464 (1)    |
| Zinc      | mg/l | -              | 5.0  | 0.567             | 0.177         | 0.376        | 0.759           | 1.01         |

**TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS  
NL/TARACORP SUPERFUND SITE**

| Parameter | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS<br>(mg/L) | MW-108D      |                 |               |                   |               |              |                 |              |
|-----------|------|----------------|--|--------------|-----------------|---------------|-------------------|---------------|--------------|-----------------|--------------|
|           |      |                |  | JULY<br>1992 | OCTOBER<br>1992 | MARCH<br>1993 | SEPTEMBER<br>1993 | APRIL<br>1994 | JULY<br>1994 | OCTOBER<br>1994 | JUNE<br>1995 |
| Antimony  | mg/l | 0.006          | -  | <0.008       | 0.022 (1)       | <0.060        | <0.050            | <0.006        | <0.006       | <0.006          | <0.0012      |
| Arsenic   | mg/l | 0.05           | 0.05                                       | <0.003       | 0.018           | <0.003        | <0.010            | <0.010        | <0.010       | <0.010          | 0.0032       |
| Beryllium | mg/l | 0.004          | -  | <0.0006      | 0.00202         | <0.0006       | <0.005            | <0.004        | <0.004       | <0.004          | <0.005       |
| Cadmium   | mg/l | 0.005          | 0.005                                      | 8.5 (3)      | 9.6 (3)         | 1.9 (3)       | 4.51 (3)          | 5.41 (3)      | 10.3(3)      | 11.6(3)         | 0.046 (3)    |
| Chromium  | mg/l | 0.1            | 0.1  | 0.006        | 0.073 J         | 0.022         | <0.010            | <0.010        | 0.110(3)     | <0.010          | <0.010       |
| Copper    | mg/l | 1.3*           | 0.65                                       | <0.014       | 0.045           | <0.014        | <0.025            | <0.025        | 0.053        | <0.025          | <0.025       |
| Lead      | mg/l | 0.015*         | 0.0075                                     | 0.023 (3)    | 0.14 (3)        | 0.0043        | <0.003            | <0.003        | 0.102(3)     | 0.007           | 0.0011       |
| Mercury   | mg/l | 0.002          | 0.002                                      | <0.0002      | 0.0002          | <0.0002       | <0.0002           | <0.0002       | 0.0009       | <0.0002         | <0.0002      |
| Nickel    | mg/l | 0.1            | 0.1  | 0.46 (3)     | 0.63 (3)        | 0.17 (3)      | 0.313 (3)         | 0.435 (3)     | 0.793(3)     | 0.849(3)        | 0.137 (3)    |
| Selenium  | mg/l | 0.05           | 0.05                                       | <0.003       | <0.003          | <0.015        | <0.005            | <0.005        | <0.005       | <0.005          | <0.0008      |
| Silver    | mg/l | -              | 0.05                                       | <0.0004      | <0.009          | <0.009        | <0.010            | 0.012         | <0.010       | <0.010          | <0.010       |
| Thallium  | mg/l | 0.002          | -  | 0.046 (1)    | 0.046 (1)       | 0.028 (1)     | <0.050            | 0.045 (1)     | 0.094(1)     | 0.133(1)        | <0.001       |
| Zinc      | mg/l | -              | 5.0  | 28 (2)       | 34 (2)          | 7.6 (2)       | 18.1 (2)          | 23.1 (2)      | 38.6(2)      | 44.9(2)         | 4.78 (2)     |

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS  
NL/TARACORP SUPERFUND SITE

| Parameter | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS<br>(mg/L) | MW-108D            |                 |               |                   |
|-----------|------|----------------|--|--------------------|-----------------|---------------|-------------------|
|           |      |                |  | QC FIELD DUPLICATE |                 |               |                   |
|           |      |                |  | JULY<br>1992       | OCTOBER<br>1992 | MARCH<br>1993 | SEPTEMBER<br>1993 |
| Antimony  | mg/l | 0.006          | -  | <0.002             | <0.011          | <0.060        | <0.050            |
| Arsenic   | mg/l | 0.05           | 0.05                                       | <0.003             | 0.023           | <0.003        | <0.010            |
| Beryllium | mg/l | 0.004          | -  | 0.0007             | 0.00188         | <0.0006       | <0.005            |
| Cadmium   | mg/l | 0.005          | 0.005                                      | 9.0 (3)            | 9.2 (3)         | 1.9 (3)       | 4.42 (3)          |
| Chromium  | mg/l | 0.1            | 0.1  | 0.006              | 0.084 J         | 0.029         | <0.010            |
| Copper    | mg/l | 1.3*           | 0.65                                       | <0.014             | 0.044           | <0.014        | <0.025            |
| Lead      | mg/l | 0.015*         | 0.0075                                     | 0.026 (3)          | 0.15 (3)        | 0.0038        | <0.003            |
| Mercury   | mg/l | 0.002          | 0.002                                      | <0.0002            | 0.0002          | <0.0002       | <0.0002           |
| Nickel    | mg/l | 0.1            | 0.1  | 0.47 (3)           | 0.64 (3)        | 0.18 (3)      | 0.302 (3)         |
| Selenium  | mg/l | 0.05           | 0.05                                       | <0.003             | <0.003          | <0.015        | <0.005            |
| Silver    | mg/l | -              | 0.05                                       | <0.0004            | <0.009          | <0.009        | <0.010            |
| Thallium  | mg/l | 0.002          | -  | 0.048 (1)          | 0.051 (1)       | 0.029 (1)     | 0.05 (1)          |
| Zinc      | mg/l | -              | 5.0  | 28 (2)             | 34 (2)          | 7.7 (2)       | 17.9 (2)          |

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS  
NL/TARACORP SUPERFUND SITE

| Parameter | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS<br>(mg/L) | MW-109       |                 |               |                   |               |              |                 |              |
|-----------|------|----------------|--|--------------|-----------------|---------------|-------------------|---------------|--------------|-----------------|--------------|
|           |      |                |  | JULY<br>1992 | OCTOBER<br>1992 | MARCH<br>1993 | SEPTEMBER<br>1993 | APRIL<br>1994 | JULY<br>1994 | OCTOBER<br>1994 | JUNE<br>1995 |
| Antimony  | mg/l | 0.006          | -  | <0.002       | <0.011          | <0.060        | <0.050            | <0.006        | <0.006       | <0.006          | <0.0012      |
| Arsenic   | mg/l | 0.05           | 0.05                                       | <0.003       | <0.003          | <0.003        | <0.010            | <0.010        | <0.010       | <0.010          | 0.0024       |
| Beryllium | mg/l | 0.004          | -  | <0.0006      | <0.0006         | <0.0006       | <0.005            | <0.004        | <0.004       | <0.004          | <0.005       |
| Cadmium   | mg/l | 0.005          | 0.005                                      | 0.0028       | <0.005          | <0.005        | <0.005            | <0.005        | <0.005       | <0.005          | <0.005       |
| Chromium  | mg/l | 0.1            | 0.1  | <0.002       | <0.013          | <0.013        | <0.010            | <0.010        | <0.010       | <0.010          | <0.010       |
| Copper    | mg/l | 1.3*           | 0.65                                       | <0.014       | <0.014          | <0.014        | <0.025            | <0.025        | <0.025       | 0.027           | <0.025       |
| Lead      | mg/l | 0.015*         | 0.0075                                     | 0.0046       | 0.019 (3)       | <0.002        | <0.003            | <0.003        | <0.003       | <0.003          | 0.0012       |
| Mercury   | mg/l | 0.002          | 0.002                                      | <0.0002      | <0.0002         | <0.0002       | <0.0002           | <0.0002       | <0.0002      | <0.0002         | <0.0002      |
| Nickel    | mg/l | 0.1            | 0.1  | <0.023       | <0.023          | <0.023        | 0.059             | <0.040        | <0.040       | <0.040          | <0.040       |
| Selenium  | mg/l | 0.05           | 0.05                                       | <0.003       | <0.003          | <0.003        | <0.005            | <0.005        | <0.005       | <0.005          | <0.0004      |
| Silver    | mg/l | -              | 0.05                                       | <0.0004      | <0.009          | <0.009        | <0.010            | <0.010        | <0.010       | <0.010          | <0.010       |
| Thallium  | mg/l | 0.002          | -  | <0.002       | <0.002          | <0.002        | <0.050            | <0.002        | <0.002       | <0.002          | <0.001       |
| Zinc      | mg/l | -              | 5.0  | 0.057        | 0.077 J         | <0.020        | <0.020            | <0.020        | <0.020       | <0.020          | <0.020       |

**TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS  
NL/TARACORP SUPERFUND SITE**

| Parameter | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS<br>(mg/L) | MW-109-92    |                 |               |                   |               |              |                 |              |
|-----------|------|----------------|--|--------------|-----------------|---------------|-------------------|---------------|--------------|-----------------|--------------|
|           |      |                |  | JULY<br>1992 | OCTOBER<br>1992 | MARCH<br>1993 | SEPTEMBER<br>1993 | APRIL<br>1994 | JULY<br>1994 | OCTOBER<br>1994 | JUNE<br>1995 |
| Antimony  | mg/l | 0.006          | -  | <0.002       | <0.011          | <0.060        | <0.050            | <0.006        | <0.006       | <0.006          | <0.0012      |
| Boron     | mg/l | 0.900          | -  | -            | -               | -             | -                 | -             | -            | -               | -            |
| Arsenic   | mg/l | 0.05           | 0.05                                       | <0.003       | <0.003          | <0.003        | <0.010            | <0.010        | <0.010       | <0.010          | 0.0012       |
| Beryllium | mg/l | 0.004          | -  | <0.0006      | <0.0006         | <0.0006       | <0.005            | <0.004        | <0.004       | <0.004          | <0.005       |
| Cadmium   | mg/l | 0.005          | 0.005                                      | 0.0018       | <0.005          | <0.005        | <0.005            | <0.005        | <0.005       | <0.005          | <0.005       |
| Chromium  | mg/l | 0.1            | 0.1  | 0.003        | 0.021 U         | <0.013        | <0.010            | 0.011         | <0.010       | <0.010          | <0.010       |
| Copper    | mg/l | 1.3*           | 0.65                                       | <0.014       | <0.014          | <0.014        | <0.025            | <0.025        | <0.025       | 0.154           | <0.025       |
| Lead      | mg/l | 0.015*         | 0.0075                                     | 0.018 (3)    | 0.0038          | <0.002        | <0.003            | <0.003        | <0.003       | <0.003          | <0.0009      |
| Mercury   | mg/l | 0.002          | 0.002                                      | <0.0002      | <0.0002         | <0.0002       | <0.0002           | <0.0002       | <0.0002      | <0.0002         | <0.0002      |
| Nickel    | mg/l | 0.1            | 0.1  | <0.023       | <0.023          | <0.023        | <0.040            | <0.040        | <0.040       | <0.040          | <0.040       |
| Selenium  | mg/l | 0.05           | 0.05                                       | <0.003       | <0.003          | <0.003        | <0.005            | <0.005        | <0.005       | <0.005          | <0.0004      |
| Silver    | mg/l | -              | 0.05                                       | <0.0004      | <0.009          | <0.009        | <0.010            | <0.010        | <0.010       | <0.010          | <0.010       |
| Thallium  | mg/l | 0.002          | -  | <0.002       | <0.002          | <0.002        | <0.050            | <0.002        | <0.002       | <0.002          | <0.001       |
| Zinc      | mg/l | -              | 5.0  | 0.081        | 0.057 J         | <0.020        | <0.020            | <0.020        | <0.020       | 0.069           | <0.020       |

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS  
NL/TARACORP SUPERFUND SITE

| Parameter          | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS<br>(mg/L) | MW-110       |                 |               |                   |               |              |                 |              | MW-110<br>QC FIELD<br>DUPLICATE |
|--------------------|------|----------------|--|--------------|-----------------|---------------|-------------------|---------------|--------------|-----------------|--------------|---------------------------------|
|                    |      |                |  | JULY<br>1992 | OCTOBER<br>1992 | MARCH<br>1993 | SEPTEMBER<br>1993 | APRIL<br>1994 | JULY<br>1994 | OCTOBER<br>1994 | JUNE<br>1995 |                                 |
| Antimony           | mg/l | 0.006          | -  | <0.002       | <0.011          | <0.060        | <0.050            | <0.006        | <0.006       | <0.006          | <0.0012      | <0.006                          |
| Antimony, filtered | mg/l | 0.006*         | -  |              |                 |               |                   |               |              |                 |              |                                 |
| Arsenic            | mg/l | 0.05           | 0.05                                       | <0.003       | <0.003          | <0.003        | <0.010            | <0.010        | <0.010       | <0.010          | 0.0013       | <0.010                          |
| Beryllium          | mg/l | 0.004          | -  | <0.0006      | <0.0006         | <0.0006       | <0.005            | <0.004        | <0.004       | <0.004          | <0.005       | <0.004                          |
| Boron              | mg/l | 0.004          | -  |              |                 |               |                   |               |              |                 |              |                                 |
| Cadmium            | mg/l | 0.005          | 0.005                                      | 0.0013       | <0.005          | <0.005        | <0.005            | <0.005        | <0.005       | <0.005          | <0.005       | <0.005                          |
| Cadmium, filtered  | mg/l | 0.005*         | 0.005                                      |              |                 |               |                   |               |              |                 |              |                                 |
| Chromium           | mg/l | 0.1            | 0.1  | <0.002       | <0.013          | <0.013        | <0.010            | <0.010        | <0.010       | <0.010          | <0.010       | <0.010                          |
| Chromium, filtered | mg/l | 0.1*           | 0.1  |              |                 |               |                   |               |              |                 |              |                                 |
| Copper             | mg/l | 1.3*           | 0.65                                       | <0.014       | <0.014          | <0.014        | <0.025            | <0.025        | 0.043        | 0.084           | <0.025       | 0.070                           |
| Copper, filtered   | mg/l | 1.3*           | 0.65                                       |              |                 |               |                   |               |              |                 |              |                                 |
| Lead               | mg/l | 0.015*         | 0.0075                                     | 0.0042       | 0.017 (3)       | <0.002        | <0.003            | <0.003        | <0.003       | <0.003          | 0.0009       | <0.003                          |
| Lead, filtered     | mg/l | 0.015*         | 0.0075                                     |              |                 |               |                   |               |              |                 |              |                                 |
| Mercury            | mg/l | 0.002          | 0.002                                      | <0.0002      | <0.0002         | <0.0002       | <0.0002           | <0.0002       | <0.0002      | <0.0002         | <0.0002      | <0.0002                         |
| Mercury, filtered  | mg/l | 0.002*         | 0.002                                      |              |                 |               |                   |               |              |                 |              |                                 |
| Nickel             | mg/l | 0.1            | 0.1  | <0.023       | 0.033           | <0.023        | <0.040            | <0.040        | <0.040       | <0.040          | <0.040       | <0.040                          |
| Nickel, filtered   | mg/l | 0.1*           | 0.1  |              |                 |               |                   |               |              |                 |              |                                 |
| Selenium           | mg/l | 0.05           | 0.05                                       | <0.003       | <0.003          | <0.003        | <0.005            | <0.005 J      | <0.005       | <0.005          | <0.0004      | <0.005                          |
| Selenium, filtered | mg/l | 0.05*          | 0.05                                       |              |                 |               |                   |               |              |                 |              |                                 |
| Silver             | mg/l | -              | 0.05                                       | <0.0004      | <0.009          | <0.009        | <0.010            | <0.010        | <0.010       | <0.010          | <0.010       | <0.010                          |
| Silver, filtered   | mg/l | -*             | 0.05                                       |              |                 |               |                   |               |              |                 |              |                                 |
| Thallium           | mg/l | 0.002          | -  | <0.002       | <0.002          | <0.002        | <0.050            | <0.002        | <0.002       | <0.002          | <0.001       | <0.002                          |
| Thallium, filtered | mg/l | 0.002*         | -  |              |                 |               |                   |               |              |                 |              |                                 |
| Zinc               | mg/l | -              | 5.0  | 0.043        | 0.078           | <0.020        | <0.020            | <0.020        | 0.092        | 0.051           | <0.021       | 0.081                           |
| Zinc, filtered     | mg/l | -*             | 5.0  |              |                 |               |                   |               |              |                 |              |                                 |

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS  
NL/TARACORP SUPERFUND SITE

| Parameter | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS<br>(mg/L) | MW-111-92    |                 |               |                   |               |              |                 |              |
|-----------|------|----------------|--|--------------|-----------------|---------------|-------------------|---------------|--------------|-----------------|--------------|
|           |      |                |  | JULY<br>1992 | OCTOBER<br>1992 | MARCH<br>1993 | SEPTEMBER<br>1993 | APRIL<br>1994 | JULY<br>1994 | OCTOBER<br>1994 | JUNE<br>1995 |
| Antimony  | mg/l | 0.006          | -  | <0.002       | <0.011          | <0.060        | <0.050            | <0.006        | <0.006       | <0.006          | <0.0012      |
| Arsenic   | mg/l | 0.05           | 0.05                                       | 0.0046       | 0.0037          | <0.003        | <0.010            | <0.010        | <0.010       | <0.010          | 0.0012       |
| Beryllium | mg/l | 0.004          | -  | <0.0006      | <0.0006         | <0.0006       | <0.005            | <0.004        | <0.004       | <0.004          | <0.005       |
| Cadmium   | mg/l | 0.005          | 0.005                                      | <0.0003      | <0.005          | <0.005        | <0.005            | <0.005        | <0.005       | <0.005          | <0.005       |
| Chromium  | mg/l | 0.1            | 0.1  | <0.002       | 0.024 U         | <0.013        | <0.010            | <0.010        | 0.015        | <0.010          | <0.010       |
| Copper    | mg/l | 1.3*           | 0.65                                       | <0.014       | <0.014          | <0.014        | <0.025            | <0.025        | 0.029        | <0.025          | <0.025       |
| Lead      | mg/l | 0.015*         | 0.0075                                     | 0.003        | 0.009 (2)       | <0.002        | <0.003            | <0.003        | 0.003 U      | <0.003          | 0.0009       |
| Mercury   | mg/l | 0.002          | 0.002                                      | <0.0002      | <0.0002         | <0.0002       | <0.0002           | <0.0002       | <0.0002      | <0.0002         | <0.0002      |
| Nickel    | mg/l | 0.1            | 0.1  | <0.023       | <0.023          | <0.023        | <0.040            | <0.040        | <0.040       | <0.040          | <0.040       |
| Selenium  | mg/l | 0.05           | 0.05                                       | <0.003       | <0.003          | <0.003        | <0.005            | <0.005        | 0.005 U      | <0.005          | <0.0004      |
| Silver    | mg/l | -              | 0.05                                       | <0.0004      | <0.009          | <0.009        | <0.010            | <0.010        | <0.010       | <0.010          | <0.010       |
| Thallium  | mg/l | 0.002          | -  | <0.002       | <0.002          | <0.002        | <0.050            | <0.002        | <0.002       | <0.002          | <0.001       |
| Zinc      | mg/l | -              | 5.0  | 0.043        | 0.073           | <0.020        | <0.020            | <0.020        | 0.088        | <0.020          | <0.020       |

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS  
NL/TARACORP SUPERFUND SITE

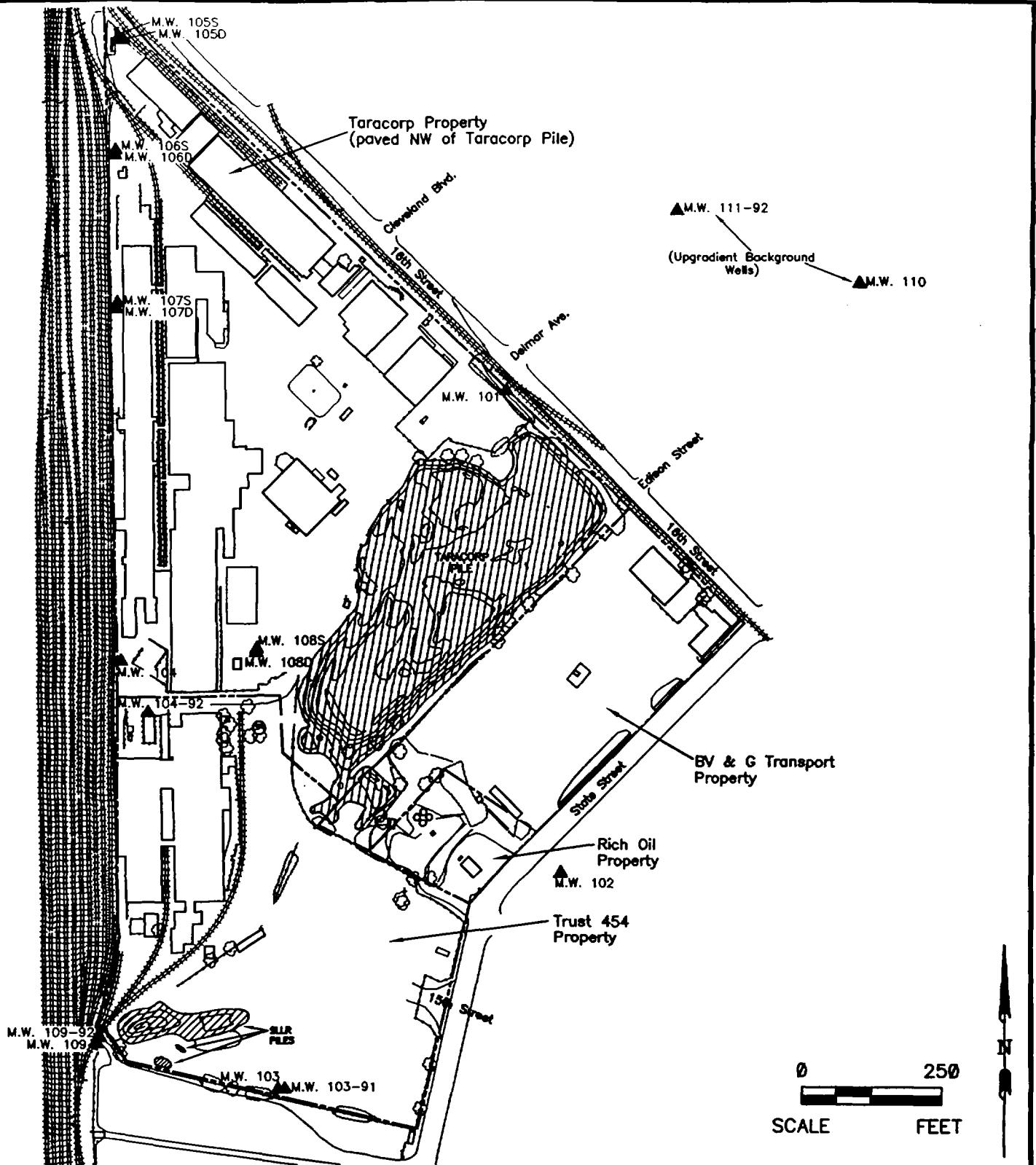
| Parameter | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS<br>(mg/L) | MW-111-92          |         |         |         |         |         |         |
|-----------|------|----------------|--|--------------------|---------|---------|---------|---------|---------|---------|
|           |      |                |  | QC FIELD DUPLICATE |         |         |         |         |         |         |
| Antimony  | mg/l | 0.006          | -  | <0.002             | <0.011  | <0.060  | <0.050  | <0.006  | <0.006  | <0.0012 |
| Arsenic   | mg/l | 0.05           | 0.05                                       | 0.004              | <0.003  | <0.003  | <0.010  | <0.010  | <0.010  | 0.0011  |
| Beryllium | mg/l | 0.004          | -  | <0.0006            | <0.0006 | <0.0006 | <0.005  | <0.004  | <0.004  | <0.005  |
| Cadmium   | mg/l | 0.005          | 0.005                                      | 0.0004             | <0.005  | <0.005  | <0.005  | <0.005  | <0.005  | <0.005  |
| Chromium  | mg/l | 0.1            | 0.1  | <0.002             | 0.027 U | <0.013  | <0.010  | <0.010  | <0.010  | <0.010  |
| Copper    | mg/l | 1.3*           | 0.65                                       | <0.014             | <0.014  | <0.014  | <0.003  | <0.003  | <0.003  | <0.0009 |
| Lead      | mg/l | 0.015*         | 0.0075                                     | 0.0094 (2)         | 0.0072  | <0.002  | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| Mercury   | mg/l | 0.002          | 0.002                                      | <0.0002            | <0.0002 | <0.0002 | <0.040  | <0.040  | <0.040  | <0.040  |
| Nickel    | mg/l | 0.1            | 0.1  | <0.023             | <0.023  | <0.023  | <0.005  | <0.005  | <0.005  | <0.0004 |
| Selenium  | mg/l | 0.05           | 0.05                                       | <0.003             | <0.003  | <0.003  | <0.010  | <0.010  | <0.010  | <0.010  |
| Silver    | mg/l | -              | 0.05                                       | <0.0004            | <0.009  | <0.009  | <0.050  | <0.002  | <0.002  | <0.001  |
| Thallium  | mg/l | 0.002          | -  | <0.002             | <0.002  | <0.002  | <0.020  | <0.020  | <0.020  | 0.03    |
| Zinc      | mg/l | -              | 5.0  | 0.059              | 0.068   | <0.020  | <0.020  | <0.020  | <0.020  |         |

11/01/95  
HISTMET2.XLS

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS  
NL/TARACORP SUPERFUND SITE

| Parameter          | Unit | MCLs<br>(mg/L) | ILLINOIS<br>CLASS I<br>STANDARDS<br>(mg/L) | MW-112<br>QC RINSATE BLANK |                 |               |                   |               |              |                 |              | MW-113<br>QC<br>RINSATE |
|--------------------|------|----------------|--|----------------------------|-----------------|---------------|-------------------|---------------|--------------|-----------------|--------------|-------------------------|
|                    |      |                |  | JULY<br>1992               | OCTOBER<br>1992 | MARCH<br>1993 | SEPTEMBER<br>1993 | APRIL<br>1994 | JULY<br>1994 | OCTOBER<br>1994 | JUNE<br>1995 | APRIL<br>1994           |
| Antimony           | mg/l | 0.006          | -  | <0.002                     | <0.011          | <0.060        | <0.050            | <0.006        | <0.006       | <0.006          | <0.0012      | <0.006                  |
| Antimony, filtered | mg/l | 0.006          | -  | <0.002                     | <0.011          | <0.060        | <0.050            | <0.006        | <0.006       | <0.006          | <0.0012      | <0.006                  |
| Arsenic            | mg/l | 0.05           | 0.05                                       | 0.0032                     | <0.003          | <0.003        | <0.010            | <0.010        | <0.010       | <0.010          | <0.0004      | <0.010                  |
| Beryllium          | mg/l | 0.004          | -  | <0.0006                    | <0.0006         | <0.0006       | <0.005            | <0.004        | <0.004       | <0.004          | <0.005       | <0.004                  |
| Cadmium            | mg/l | 0.005          | 0.005                                      | <0.0003                    | <0.005          | <0.005        | <0.005            | <0.005        | <0.005       | <0.005          | <0.005       | <0.005                  |
| Chromium, filtered | mg/l | 0.005          | 0.005                                      | <0.002                     | <0.013          | <0.013        | <0.010            | <0.010        | <0.010       | <0.010          | <0.010       | <0.010                  |
| Chromium, total    | mg/l | 0.1            | 0.1  | <0.002                     | <0.013          | <0.013        | <0.010            | <0.010        | <0.010       | <0.010          | <0.010       | <0.010                  |
| Copper             | mg/l | 1.3*           | 0.65                                       | <0.014                     | <0.014          | <0.014        | <0.025            | <0.025        | <0.025       | <0.025          | <0.025       | <0.025                  |
| Copper, filtered   | mg/l | 1.3*           | 0.65                                       | <0.014                     | <0.014          | <0.014        | <0.025            | <0.025        | <0.025       | <0.025          | <0.025       | <0.025                  |
| Lead               | mg/l | 0.015*         | 0.0075                                     | <0.002                     | <0.002          | <0.002        | <0.003            | <0.003        | <0.003       | <0.003          | <0.0009      | <0.003                  |
| Lead, filtered     | mg/l | 0.015*         | 0.0075                                     | <0.002                     | <0.002          | <0.002        | <0.003            | <0.003        | <0.003       | <0.003          | <0.0009      | <0.003                  |
| Mercury            | mg/l | 0.002          | 0.002                                      | <0.0002                    | <0.0002         | <0.0002       | <0.0002           | <0.0002       | <0.0002      | <0.0002         | <0.0002      | <0.0002                 |
| Nickel, filtered   | mg/l | 0.1            | 0.1  | <0.023                     | <0.023          | <0.023        | <0.040            | <0.040        | <0.040       | <0.040          | <0.040       | <0.040                  |
| Nickel, total      | mg/l | 0.1            | 0.1  | <0.023                     | <0.023          | <0.023        | <0.040            | <0.040        | <0.040       | <0.040          | <0.040       | <0.040                  |
| Selenium           | mg/l | 0.05           | 0.05                                       | <0.003                     | <0.003          | <0.003        | <0.005            | <0.005        | <0.005       | <0.005          | 0.0009       | <0.005                  |
| Selenium, filtered | mg/l | 0.05           | 0.05                                       | <0.003                     | <0.003          | <0.003        | <0.005            | <0.005        | <0.005       | <0.005          | 0.0009       | <0.005                  |
| Silver             | mg/l | -              | 0.05                                       | <0.0004                    | <0.009          | <0.009        | <0.010            | <0.010        | <0.010       | <0.010          | <0.010       | <0.010                  |
| Silver, filtered   | mg/l | -              | 0.05                                       | <0.0004                    | <0.009          | <0.009        | <0.010            | <0.010        | <0.010       | <0.010          | <0.010       | <0.010                  |
| Thallium           | mg/l | 0.002          | -  | <0.002                     | <0.002          | <0.002        | <0.050            | <0.002        | <0.002       | 0.003(1)        | <0.001       | <0.002                  |
| Thallium, filtered | mg/l | 0.002          | -  | <0.002                     | <0.002          | <0.002        | <0.050            | <0.002        | <0.002       | 0.003(1)        | <0.001       | <0.002                  |
| Zinc               | mg/l | -              | 5.0  | <0.020                     | <0.020          | <0.020        | <0.020            | <0.020        | <0.020       | <0.020          | <0.020       | <0.020                  |
| Zinc, filtered     | mg/l | -              | 5.0  | <0.020                     | <0.020          | <0.020        | <0.020            | <0.020        | <0.020       | <0.020          | <0.020       | <0.020                  |

# **FIGURES**



LEGEND

▲ DENOTES MONITORING WELL  
M.W. 108S

— DENOTES PROPERTY LINE

NL/TARACORP SUPERFUND SITE PDFI  
GRANITE CITY, ILLINOIS  
U.S. ARMY CORPS OF ENGINEERS

PROJECT NO.  
C3M11Q

**Woodward-Clyde  
Consultants**

Engineering & sciences applied to the earth & its environment

DRN. BY: kdw 11/11/93  
DSGN. BY:  
CHKD. BY: DCP n/93

Main Industrial Property  
Site Plan

FIG. NO.  
1

**Woodward-Clyde**

# **ATTACHMENT 1**



✓MAM  
7-11-95

## METALS/WET CHEMISTRY DATA ASSESSMENT

PROJECT NO. C3m11Q1  
LABORATORY ENVIRONMETRICS  
LAB PROJECT NO. 321.55  
NO. OF SAMPLES/  
MATRIX 13 / WATER

SITE NL/TARACORP

REVIEWER Woodward-Clyde Consultants  
REVIEWER'S NAME WENDY RETNGDIT  
COMPLETION DATE 7/11/95

### DATA ASSESSMENT WORKSHEET

|                       | 6010<br>Meth #<br>ICP/AA | METALS<br>Meth #<br>GF/AA | Meth # | Meth # | Meth # |
|-----------------------|--------------------------|---------------------------|--------|--------|--------|
| 1. HOLDING TIMES      | ✓                        | ✓                         | —      | —      | —      |
| 2. BLANKS             | (1)                      | (2)                       | —      | —      | —      |
| 3. SCS                | ✓                        | ✓                         | —      | —      | —      |
| 4. DCS                | NA                       | NA                        | —      | —      | —      |
| 5. DILUTION           | ✓                        | ✓                         | —      | —      | —      |
| 6. OTHER QC ms/msd    | ✓                        | (3)                       | —      | —      | —      |
| 7. OVERALL ASSESSMENT | O                        | OK                        | —      | —      | —      |

O = Data had no problems/or qualified due to minor problems.

M = Data qualified due to major problems.

Z = Data unacceptable.

X = Problems, but do not affect data.

ACTION ITEMS: (1) ZINC WAS DETECTED IN THE PREPARATION BLANK. ALL RESULTS GREATER THAN DETECTION LIMIT BUT LESS THAN 5 X BLANK VALUE ARE QUALIFIED AS NON-DETECT (U).

(2) ANTIMONY AND SELENIUM WERE DETECTED IN THE PREPARATION BLANK. ALL RESULTS GREATER THAN DETECTION LIMIT BUT LESS THAN 5X BLANK VALUE ARE QUALIFIED AS NON-DETECT (U).

COMMENTS: (3) SELENIUM % RECOVERY FOR MS/MSD ANALYSIS FALLS OUTSIDE CONTROL LIMITS. ALL SELENIUM ANALYSIS ARE NON-DETECT (INCLUDING SAMPLES QUALIFIED NON-DETECT BY PREPARATION BLANK CONTAMINATION). DATA NOT ACCEPTED. NO ACTION NECESSARY. ANTIMONY RECOVERY IS SLIGHTLY OUT OF CONTROL LIMITS. NO ACTION.

(4) ALL ARSENIC VALUES WERE QUALIFIED AS "B" BY THE LABORATORY BASED ON INFORMATION NOT REVIEWED BY WCC. ARSENIC VALUES WERE MARKED WITH "NON-DETECT" (U) TO EQUALIZE THE TWO VALIDATING/REVIEWING CLASSIFICATIONS.

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32655

PO: ---

PROJECT NO: C3M11Q N/L TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMW109-10GGW  
LAB ID: 9506000321-001  
DATE COLLECTED: 06/16/95  
DATE RECEIVED: 06/16/95 16:08

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u>  | <u>ANALYST</u> |
|-----------------------|---------------------------|-----------------|----------------|
| TOTAL ANTIMONY        | SW-846 7041               | <0.0012 mg/L    | 06/29/95 D.S.  |
| TOTAL ARSENIC         | SW-846 7060               | 0.00240 mg/L BU | 06/29/95 D.S.  |
| TOTAL BERYLLIUM       | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| TOTAL CADMIUM         | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| TOTAL CHROMIUM        | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| TOTAL COPPER          | SW-846 6010A              | <0.025 mg/L     | 06/23/95 R.D.  |
| TOTAL LEAD            | SW-846 7421               | 0.00120 mg/L    | 06/23/95 D.S.  |
| TOTAL MERCURY         | SW-846 7470A              | <0.0002 mg/L    | 06/23/95 J.N.  |
| TOTAL NICKEL          | SW-846 6010A              | <0.040 mg/L     | 06/23/95 R.D.  |
| TOTAL SELENIUM        | SW-846 7740               | <0.0004 mg/L    | 06/30/95 D.S.  |
| TOTAL SILVER          | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| TOTAL THALLIUM        | SW-846 7841               | <0.001 mg/L     | 06/29/95 D.S.  |
| TOTAL ZINC            | SW-846 6010A              | <0.020 mg/L     | 06/23/95 R.D.  |

B = Reported value is greater than the  
Method Detection Limit (MDL) but less than  
the Practical Quantitation Limit (PQL).

July 5, 1995

  
Wayne L. Cooper P.E.  
Laboratory Director

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32655

PO: ---

PROJECT NO: C3M11Q N/L TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMMW109920GGW  
LAB ID: 9506000321-002  
DATE COLLECTED: 06/16/95  
DATE RECEIVED: 06/16/95 16:09

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u>  | <u>ANALYST</u> |
|-----------------------|---------------------------|-----------------|----------------|
| TOTAL ANTIMONY        | SW-846 7041               | <0.0012 mg/L    | 06/29/95 D.S.  |
| TOTAL ARSENIC         | SW-846 7060               | 0.00120 mg/L BU | 06/29/95 D.S.  |
| TOTAL BERYLLIUM       | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| TOTAL CADMIUM         | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| TOTAL CHROMIUM        | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| TOTAL COPPER          | SW-846 6010A              | <0.025 mg/L     | 06/23/95 R.D.  |
| TOTAL LEAD            | SW-846 7421               | <0.0009 mg/L    | 06/23/95 D.S.  |
| TOTAL MERCURY         | SW-846 7470A              | <0.0002 mg/L    | 06/23/95 J.N.  |
| TOTAL NICKEL          | SW-846 6010A              | <0.040 mg/L     | 06/23/95 R.D.  |
| TOTAL SELENIUM        | SW-846 7740               | <0.0004 mg/L    | 06/30/95 D.S.  |
| TOTAL SILVER          | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| TOTAL THALLIUM        | SW-846 7841               | <0.001 mg/L     | 06/29/95 D.S.  |
| TOTAL ZINC            | SW-846 6010A              | <0.020 mg/L     | 06/23/95 R.D.  |

B = Reported value is greater than the  
Method Detection Limit (MDL) but less than  
the Practical Quantitation Limit (PQL).

July 5, 1995

  
Wayne L. Cooper, P.D.  
Laboratory Director

— Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

— ATTN: Eric Page

— INVOICE: 32655

PO: ---

— PROJECT NO: C3M11Q N/L TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

— SAMPLE ID: WMMW110-10GGW  
LAB ID: 9506000321-003  
DATE COLLECTED: 06/16/95  
DATE RECEIVED: 06/16/95 16:09

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u>   | <u>ANALYST</u> |
|-----------------------|---------------------------|------------------|----------------|
| TOTAL ANTIMONY        | SW-846 7041               | <0.0012 mg/L     | 06/29/95 D.S.  |
| TOTAL ARSENIC         | SW-846 7060               | 0.00130 mg/L B U | 06/29/95 D.S.  |
| TOTAL BERYLLIUM       | SW-846 6010A              | <0.005 mg/L      | 06/23/95 R.D.  |
| TOTAL CADMIUM         | SW-846 6010A              | <0.005 mg/L      | 06/23/95 R.D.  |
| TOTAL CHROMIUM        | SW-846 6010A              | <0.010 mg/L      | 06/23/95 R.D.  |
| TOTAL COPPER          | SW-846 6010A              | <0.025 mg/L      | 06/23/95 R.D.  |
| TOTAL LEAD            | SW-846 7421               | <0.0009 mg/L     | 06/23/95 D.S.  |
| TOTAL MERCURY         | SW-846 7470A              | <0.0002 mg/L     | 06/23/95 J.N.  |
| TOTAL NICKEL          | SW-846 6010A              | <0.040 mg/L      | 06/23/95 R.D.  |
| TOTAL SELENIUM        | SW-846 7740               | <0.0004 mg/L     | 07/03/95 D.S.  |
| TOTAL SILVER          | SW-846 6010A              | <0.010 mg/L      | 06/23/95 R.D.  |
| TOTAL THALLIUM        | SW-846 7841               | <0.001 mg/L      | 06/29/95 D.S.  |
| TOTAL ZINC            | SW-846 6010A              | 0.0210 mg/L U    | 06/23/95 R.D.  |

— B = Reported value is greater than the  
Method Detection Limit (MDL) but less than  
the Practical Quantitation Limit (PQL).

July 5, 1995

  
Wayne L. Cooper PhD  
Laboratory Director

**ENVIRONMETRICS**

WOODWARD-CLYDE CONSULTANTS  
2318 MILLPARK DRIVE  
MARYLAND HEIGHTS, MO 63043

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

ATTN: ERIC PAGE

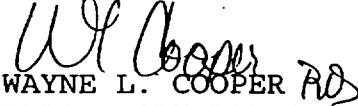
INVOICE # 32655  
PROJECT # C3M11Q1, NL/TARACORP

**QUALITY ASSURANCE QUALITY CONTROL REPORT****MATRIX SPIKE/MATRIX SPIKE DUPLICATE  
ICP/AA  
(UNITS - mg/kg)**

SAMPLE ID: WMW110-10GGW  
LAB ID: 9506/321-003  
DATE COLLECTED: 6/16/95  
DATE RECEIVED: 6/16/95 16:09

| <u>ELEMENT</u> | <u>SAMPLE<br/>RESULT<br/>(mg/kg)</u> | <u>SPIKE<br/>LEVEL<br/>(mg/kg)</u> | <u>SPIKE<br/>RESULT<br/>(mg/kg)</u> | <u>%<br/>REC.</u> | <u>DUPLICATE<br/>RESULT<br/>(mg/kg)</u> | <u>%<br/>REC.</u> | <u>RPD</u> |
|----------------|--------------------------------------|------------------------------------|-------------------------------------|-------------------|---|-------------------|------------|
| BERYLLIUM      | <0.005                               | 0.100                              | 0.093                               | 93                | 0.095                                   | 95                | 2          |
| CADMIUM        | <0.005                               | 0.100                              | 0.093                               | 93                | 0.095                                   | 95                | 2          |
| CHROMIUM       | <0.010                               | 0.400                              | 0.374                               | 94                | 0.381                                   | 95                | 1          |
| COPPER         | <0.025                               | 0.500                              | 0.478                               | 96                | 0.492                                   | 98                | 2          |
| MERCURY        | <0.0002                              | 0.0020                             | 0.0022                              | 108               | 0.0021                                  | 106               | 2          |
| NICKEL         | <0.040                               | 1.000                              | 0.940                               | 94                | 0.957                                   | 96                | 2          |
| SILVER         | <0.010                               | 0.100                              | 0.100                               | 100               | 0.100                                   | 100               | 0          |
| ZINC           | 0.021                                | 1.000                              | 0.956                               | 94                | 0.959                                   | 94                | 0          |

JULY 22, 1994

  
WAYNE L. COOPER, R.D.  
LABORATORY DIRECTOR

**ENVIRONMETRICS**

WOODWARD-CLYDE CONSULTANTS  
2318 MILLPARK DRIVE  
MARYLAND HEIGHTS, MO 63043

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

ATTN: ERIC PAGE

INVOICE # 32655  
PROJECT # C3M11Q1, NL/TARACORP

**QUALITY ASSURANCE QUALITY CONTROL REPORT****MATRIX SPIKE/MATRIX SPIKE DUPLICATE  
GRAPHITE FURNACE ATOMIC ABSORPTION  
(UNITS - mg/kg)**

SAMPLE ID: WMW110-10GGW  
LAB ID: 9506/321-003  
DATE COLLECTED: 6/16/95  
DATE RECEIVED: 6/16/95 16:09

| <u>ELEMENT</u> | <u>SAMPLE<br/>RESULT<br/>(mg/kg)</u> | <u>SPIKE<br/>LEVEL<br/>(mg/kg)</u> | <u>SPIKE<br/>RESULT<br/>(mg/kg)</u> | <u>%<br/>REC.</u> | <u>DUPLICATE<br/>RESULT<br/>(mg/kg)</u> | <u>%<br/>REC.</u> | <u>RPD</u> |
|----------------|--------------------------------------|------------------------------------|-------------------------------------|-------------------|---|-------------------|------------|
| ANTIMONY       | <0.0012                              | 0.100                              | 0.0996                              | 99.6              | 0.0997                                  | 99.7              | 0          |
| ARSENIC        | 0.0013                               | 0.040                              | 0.0362                              | 87                | 0.0372                                  | 90                | 3          |
| LEAD           | <0.0009                              | 0.020                              | 0.0184                              | 92                | 0.0185                                  | 92                | 1          |
| SELENIUM       | <0.0004                              | 0.010                              | 0.0142                              | 142               | 0.0141                                  | 141               | 1          |
| THALLIUM       | <0.001                               | 0.050                              | 0.0424                              | 85                | 0.0420                                  | 84                | 1          |

JULY 5, 1994

  
WAYNE L. COOPER   
LABORATORY DIRECTOR

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32655

PO: ---

PROJECT NO: C3M11Q N/L TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMMW107-DOGGWF  
LAB ID: 9506000321-004  
DATE COLLECTED: 06/16/95  
DATE RECEIVED: 06/16/95 16:19

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u> | <u>ANALYST</u> |
|-----------------------|---------------------------|----------------|----------------|
| DISSOLVED ANTIMONY    | SW-846 7041               | 0.00130 mg/L B | 06/29/95 D.S.  |
| DISSOLVED ARSENIC     | SW-846 7060               | 0.00630 mg/L B | 06/29/95 D.S.  |
| DISSOLVED BERYLLIUM   | SW-846 6010A              | <0.005 mg/L    | 06/23/95 R.D.  |
| DISSOLVED CADMIUM     | SW-846 6010A              | <0.005 mg/L    | 06/23/95 R.D.  |
| DISSOLVED CHROMIUM    | SW-846 6010A              | <0.010 mg/L    | 06/23/95 R.D.  |
| DISSOLVED COPPER      | SW-846 6010A              | <0.025 mg/L    | 06/23/95 R.D.  |
| DISSOLVED LEAD        | SW-846 7421               | <0.0009 mg/L   | 06/23/95 D.S.  |
| DISSOLVED MERCURY     | SW-846 7470               | <0.0002 mg/L   | 06/23/95 J.N.  |
| DISSOLVED NICKEL      | SW-846 6010A              | <0.040 mg/L    | 06/23/95 R.D.  |
| DISSOLVED SELENIUM    | SW-846 7740               | 0.00120 mg/L B | 07/03/95 D.S.  |
| DISSOLVED SILVER      | SW-846 6010A              | <0.010 mg/L    | 06/23/95 R.D.  |
| DISSOLVED THALLIUM    | SW-846 7841               | <0.001 mg/L    | 06/29/95 D.S.  |
| DISSOLVED ZINC        | SW-846 6010A              | 0.0210 mg/L B  | 06/23/95 R.D.  |
| TOTAL ANTIMONY        | SW-846 7041               | 0.00250 mg/L B | 06/29/95 D.S.  |
| TOTAL ARSENIC         | SW-846 7060               | 0.00200 mg/L B | 06/29/95 D.S.  |
| TOTAL BERYLLIUM       | SW-846 6010A              | <0.005 mg/L    | 06/23/95 R.D.  |
| TOTAL CADMIUM         | SW-846 6010A              | <0.005 mg/L    | 06/23/95 R.D.  |
| TOTAL CHROMIUM        | SW-846 6010A              | 0.0110 mg/L    | 06/23/95 R.D.  |
| TOTAL COPPER          | SW-846 6010A              | 0.0350 mg/L    | 06/23/95 R.D.  |
| TOTAL LEAD            | SW-846 7421               | 0.0172 mg/L    | 06/27/95 D.S.  |
| TOTAL MERCURY         | SW-846 7470A              | <0.0002 mg/L   | 06/23/95 J.N.  |
| TOTAL NICKEL          | SW-846 6010A              | <0.040 mg/L    | 06/23/95 R.D.  |
| TOTAL SELENIUM        | SW-846 7740               | <0.0008 mg/L   | 07/03/95 D.S.  |
| TOTAL SILVER          | SW-846 6010A              | <0.010 mg/L    | 06/23/95 R.D.  |
| TOTAL THALLIUM        | SW-846 7841               | <0.001 mg/L    | 06/29/95 D.S.  |

B = Reported value is greater than the  
Method Detection Limit (MDL) but less than  
the Practical Quantitation Limit (PQL).

July 5, 1995

  
Wayne L. Cooper PWS  
Laboratory Director

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32655

PO: ---

PROJECT NO: C3M11Q N/L TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMMW107-DOGGW  
LAB ID: 9506000321-004  
DATE COLLECTED: 06/16/95  
DATE RECEIVED: 06/16/95 16:10

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u>       | <u>ANALYST</u> |
|-----------------------|---------------------------|----------------------|----------------|
| TOTAL ZINC            | SW-846 6010A              | 0.0610 mg/L <i>W</i> | 06/23/95 R.D.  |

B = Reported value is greater than the  
Method Detection Limit (MDL) but less than  
the Practical Quantitation Limit (PQL).

July 5, 1995

*WL Cooper* *WLC*  
Wayne L. Cooper, P.E.  
Laboratory Director

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32655

PO: ---

PROJECT NO: C3M11Q N/L TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMMW107-DOGGWDF

LAB ID: 9506000321-005

DATE COLLECTED: 06/16/95

DATE RECEIVED: 06/16/95 16:20

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u>  | <u>ANALYST</u> |
|-----------------------|---------------------------|-----------------|----------------|
| DISSOLVED ANTIMONY    | SW-846 7041               | 0.00130 mg/L BU | 06/29/95 D.S.  |
| DISSOLVED ARSENIC     | SW-846 7060               | 0.00270 mg/L BU | 07/01/95 D.S.  |
| DISSOLVED BERYLLIUM   | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| DISSOLVED CADMIUM     | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| DISSOLVED CHROMIUM    | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| DISSOLVED COPPER      | SW-846 6010A              | <0.025 mg/L     | 06/23/95 R.D.  |
| DISSOLVED LEAD        | SW-846 7421               | <0.0009 mg/L    | 06/24/95 D.S.  |
| DISSOLVED MERCURY     | SW-846 7470               | <0.0002 mg/L    | 06/23/95 J.N.  |
| DISSOLVED NICKEL      | SW-846 6010A              | <0.040 mg/L     | 06/26/95 R.D.  |
| DISSOLVED SELENIUM    | SW-846 7740               | <0.0008 mg/L    | 07/03/95 D.S.  |
| DISSOLVED SILVER      | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| DISSOLVED THALLIUM    | SW-846 7841               | <0.001 mg/L     | 06/29/95 D.S.  |
| DISSOLVED ZINC        | SW-846 6010A              | 0.0220 mg/L BU  | 06/27/95 R.D.  |
| TOTAL ANTIMONY        | SW-846 7041               | 0.00180 mg/L BU | 06/29/95 D.S.  |
| TOTAL ARSENIC         | SW-846 7060               | 0.0102 mg/L     | 07/01/95 D.S.  |
| TOTAL BERYLLIUM       | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| TOTAL CADMIUM         | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| TOTAL CHROMIUM        | SW-846 6010A              | 0.0140 mg/L     | 06/23/95 R.D.  |
| TOTAL COPPER          | SW-846 6010A              | 0.0320 mg/L     | 06/23/95 R.D.  |
| TOTAL LEAD            | SW-846 7421               | 0.0280 mg/L     | 06/28/95 D.S.  |
| TOTAL MERCURY         | SW-846 7470A              | <0.0002 mg/L    | 06/23/95 J.N.  |
| TOTAL NICKEL          | SW-846 6010A              | <0.040 mg/L     | 06/26/95 R.D.  |
| TOTAL SELENIUM        | SW-846 7740               | <0.0008 mg/L    | 07/03/95 D.S.  |
| TOTAL SILVER          | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| TOTAL THALLIUM        | SW-846 7841               | <0.010 mg/L     | 06/29/95 D.S.  |

B = Reported value is greater than the  
Method Detection Limit (MDL) but less than  
the Practical Quantitation Limit (PQL).

July 5, 1995

  
Wayne L. Cooper, P.E.  
Laboratory Director

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32655  
PO: ---  
PROJECT NO: C3M11Q N/L TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMM107-DOGGWD  
LAB ID: 9506000321-005  
DATE COLLECTED: 06/16/95  
DATE RECEIVED: 06/16/95 16:37

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u>    | <u>ANALYST</u> |
|-----------------------|---------------------------|-------------------|----------------|
| TOTAL ZINC            | SW-846 6010A              | 0.0500 mg/L $\mu$ | 06/27/95 R.D.  |

B = Reported value is greater than the  
Method Detection Limit (MDL) but less than  
the Practical Quantitation Limit (PQL).

July 5, 1995

  
Wayne L. Cooper, P.E.  
Laboratory Director

WOODWARD-CLYDE CONSULTANTS  
2318 MILLPARK DRIVE  
MARYLAND HEIGHTS, MO 63043

ATTN: ERIC PAGE

INVOICE # 32655  
PROJECT # C3M11Q1, NL/TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## QUALITY ASSURANCE QUALITY CONTROL REPORT

### MATRIX SPIKE/MATRIX SPIKE DUPLICATE GRAPHITE FURNACE ATOMIC ABSORPTION (UNITS - mg/kg)

SAMPLE ID: WMW107-DOGGWDF  
LAB ID: 9506/321-005  
DATE COLLECTED: 6/16/95  
DATE RECEIVED: 6/16/95 16:20

| <u>ELEMENT</u> | <u>SAMPLE<br/>RESULT<br/>(mg/kg)</u> | <u>SPIKE<br/>LEVEL<br/>(mg/kg)</u> | <u>SPIKE<br/>RESULT<br/>(mg/kg)</u> | <u>%<br/>REC.</u> | <u>DUPLICATE<br/>RESULT<br/>(mg/kg)</u> | <u>%<br/>REC.</u> | <u>RPD</u> |
|----------------|--------------------------------------|------------------------------------|-------------------------------------|-------------------|---|-------------------|------------|
| ANTIMONY       | 0.0018                               | 0.100                              | 0.0766                              | 77                | 0.0696                                  | 70                | 7          |
| ARSENIC        | 0.0102                               | 0.040                              | 0.0531                              | 107               | 0.0596                                  | 123               | 16         |
| LEAD           | 0.0280                               | 0.020                              | 0.0507                              | 114               | 0.0483                                  | 102               | 5          |
| SELENIUM       | <0.0008                              | 0.010                              | 0.0071                              | 71                | 0.0061                                  | 61                | 15         |
| THALLIUM       | <0.0010                              | 0.050                              | 0.0402                              | 80                | 0.0382                                  | 76                | 5          |

JULY 5, 1994

  
WAYNE L. COOPER *RLS*  
LABORATORY DIRECTOR

**ENVIRONMETRICS**

WOODWARD-CLYDE CONSULTANTS  
2318 MILLPARK DRIVE  
MARYLAND HEIGHTS, MO 63043

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

ATTN: ERIC PAGE

INVOICE # 32655  
PROJECT # C3M11Q1, NL/TARACORP

**QUALITY ASSURANCE QUALITY CONTROL REPORT****MATRIX SPIKE/MATRIX SPIKE DUPLICATE  
ICP/AA  
(UNITS - mg/kg)**

SAMPLE ID: WMMW107-DOGGWDF  
LAB ID: 9506/321-005  
DATE COLLECTED: 6/16/95  
DATE RECEIVED: 6/16/95 16:20

| <u>ELEMENT</u> | <u>SAMPLE<br/>RESULT<br/>(mg/kg)</u> | <u>SPIKE<br/>LEVEL<br/>(mg/kg)</u> | <u>SPIKE<br/>RESULT<br/>(mg/kg)</u> | <u>%<br/>REC.</u> | <u>DUPLICATE<br/>RESULT<br/>(mg/kg)</u> | <u>%<br/>REC.</u> | <u>RPD</u> |
|----------------|--------------------------------------|------------------------------------|-------------------------------------|-------------------|---|-------------------|------------|
| BERYLLIUM      | <0.005                               | 0.100                              | 0.091                               | 91                | 0.092                                   | 92                | 1          |
| CADMIUM        | <0.005                               | 0.100                              | 0.089                               | 89                | 0.087                                   | 87                | 2          |
| CHROMIUM       | 0.014                                | 0.400                              | 0.374                               | 90                | 0.374                                   | 90                | 0          |
| COPPER         | 0.032                                | 0.500                              | 0.496                               | 93                | 0.489                                   | 91                | 2          |
| MERCURY        | <0.0002                              | 0.0020                             | 0.0022                              | 108               | 0.0021                                  | 105               | 3          |
| NICKEL         | <0.040                               | 1.000                              | 0.945                               | 94                | 0.950                                   | 95                | 1          |
| SILVER         | <0.010                               | 0.100                              | 0.089                               | 89                | 0.090                                   | 90                | 1          |
| ZINC           | 0.050                                | 1.000                              | 0.947                               | 90                | 0.954                                   | 90                | 0          |

JULY 22, 1994

  
WAYNE L. COOPER  
LABORATORY DIRECTOR

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, MO. 63043

ATTN: Eric Page

INVOICE: 32655

PO: ---

PROJECT NO: C3M11Q N/L TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMW108-SOOGWF

LAB ID: 9506000321-006

DATE COLLECTED: 06/16/95

DATE RECEIVED: 06/16/95 16:41

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u>  | <u>ANALYST</u> |
|-----------------------|---------------------------|-----------------|----------------|
| DISSOLVED ANTIMONY    | SW-846 7041               | <0.0012 mg/L    | 06/29/95 D.S.  |
| DISSOLVED ARSENIC     | SW-846 7060               | 0.00120 mg/L BU | 06/30/95 D.S.  |
| DISSOLVED BERYLLIUM   | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| DISSOLVED CADMIUM     | SW-846 6010A              | 0.616 mg/L      | 06/23/95 R.D.  |
| DISSOLVED CHROMIUM    | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| DISSOLVED COPPER      | SW-846 6010A              | <0.025 mg/L     | 06/23/95 R.D.  |
| DISSOLVED LEAD        | SW-846 7421               | <0.0009 mg/L    | 06/24/95 D.S.  |
| DISSOLVED MERCURY     | SW-846 7470               | <0.0002 mg/L    | 06/23/95 J.N.  |
| DISSOLVED NICKEL      | SW-846 6010A              | 0.151 mg/L      | 06/26/95 R.D.  |
| DISSOLVED SELENIUM    | SW-846 7740               | <0.0008 mg/L    | 07/03/95 D.S.  |
| DISSOLVED SILVER      | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| DISSOLVED THALLIUM    | SW-846 7841               | 0.00590 mg/L    | 06/29/95 D.S.  |
| DISSOLVED ZINC        | SW-846 6010A              | 0.388 mg/L      | 06/27/95 R.D.  |
| TOTAL ANTIMONY        | SW-846 7041               | 0.00280 mg/L BU | 06/29/95 D.S.  |
| TOTAL ARSENIC         | SW-846 7060               | 0.0892 mg/L     | 07/01/95 D.S.  |
| TOTAL BERYLLIUM       | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| TOTAL CADMIUM         | SW-846 6010A              | 0.695 mg/L      | 06/23/95 R.D.  |
| TOTAL CHROMIUM        | SW-846 6010A              | 0.0910 mg/L     | 06/23/95 R.D.  |
| TOTAL COPPER          | SW-846 6010A              | 0.141 mg/L      | 06/23/95 R.D.  |
| TOTAL LEAD            | SW-846 6010A              | 0.730 mg/L      | 6/23/95 R.D.   |
| TOTAL MERCURY         | SW-846 7470A              | 0.0004 mg/L     | 06/23/95 J.N.  |
| TOTAL NICKEL          | SW-846 6010A              | 0.284 mg/L      | 06/26/95 R.D.  |
| TOTAL SELENIUM        | SW-846 7740               | <0.0008 mg/L    | 07/03/95 D.S.  |
| TOTAL SILVER          | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| TOTAL THALLIUM        | SW-846 7841               | 0.0464 mg/L     | 07/01/95 D.S.  |

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32655

PO: ---

PROJECT NO: C3M11Q N/L TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMMW108-SOGGW  
LAB ID: 9506000321-006  
DATE COLLECTED: 06/16/95  
DATE RECEIVED: 06/16/95 16:39

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u> | <u>ANALYST</u> |
|-----------------------|---------------------------|----------------|----------------|
| TOTAL ZINC            | SW-846 6010A              | 1.01 mg/L      | 06/27/95 R.D.  |

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995

WOODWARD-CLYDE CONSULTANTS  
2318 MILLPARK DRIVE  
MARYLAND HEIGHTS, MO 63043

ATTN: ERIC PAGE

INVOICE # 32655  
PROJECT # C3M11Q1, NL/TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

PREPARATION BLANK  
ICP/AA  
(UNITS - mg/l)

| <u>ELEMENT</u> | <u>RESULT</u> |
|----------------|---------------|
| BERYLLIUM      | <0.005        |
| CADMIUM        | <0.005        |
| CHROMIUM       | <0.010        |
| COPPER         | <0.025        |
| LEAD           | <0.100        |
| MERCURY        | <0.0002       |
| SILVER         | <0.010        |
| ZINC           | 0.021         |

LABORATORY CONTROL SAMPLE  
ICP\AA  
(UNITS - mg/l)

| <u>ELEMENT</u> | <u>VALUE</u> | <u>RESULT</u> | <u>%RECOVERY</u> |
|----------------|--------------|---------------|------------------|
| BERYLLIUM      | 0.50         | 0.455         | 91               |
| CADMIUM        | 0.50         | 0.454         | 91               |
| CHROMIUM       | 0.50         | 0.469         | 94               |
| COPPER         | 0.50         | 0.469         | 94               |
| LEAD           | 0.50         | 0.428         | 86               |
| MERCURY        | 0.002        | 0.0020        | 100              |
| SILVER         | 0.50         | 0.426         | 85               |
| ZINC           | 0.50         | 0.464         | 93               |

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

WOODWARD-CLYDE CONSULTANTS  
2318 MILLPARK DRIVE  
MARYLAND HEIGHTS, MO 63043

ATTN: ERIC PAGE

INVOICE # 32655  
PROJECT # C3M11Q1, NL/TARACORP

## PREPARATION BLANK

### GRAPHITE FURNACE ATOMIC ABSORPTION (UNITS - mg/l)

| <u>ELEMENT</u> | <u>RESULT</u> |
|----------------|---------------|
| ANTIMONY       | 0.0057        |
| ARSENIC        | <0.0004       |
| LEAD           | <0.0009       |
| SELENIUM       | 0.0012        |
| THALLIUM       | <0.0010       |

## LABORATORY CONTROL SAMPLE

### GRAPHIC FURNACE ATOMIC ABSORPTION (UNITS - mg/l)

| <u>ELEMENT</u> | <u>VALUE</u> | <u>RESULT</u> | <u>%RECOVERY</u> |
|----------------|--------------|---------------|------------------|
| ANTIMONY       | 0.100        | 0.1025        | 102.5            |
| ARSENIC        | 0.050        | 0.0490        | 98               |
| LEAD           | 0.020        | 0.0192        | 96               |
| SELENIUM       | 0.025        | 0.0201        | 80               |
| THALLIUM       | 0.050        | 0.0512        | 103              |

JULY 5, 1995

  
WAYNE L. COOPER *WLC*  
LABORATORY DIRECTOR

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 1

coC : 010204  
Woodward-Clyde Consultants - W088  
2318 Millpark Drive  
Maryland Heights, Mo. 63043  
Eric Page

Date Received: 06/16/95

Date Logged: 06/16/95

Status: Normal/LEVEL 5

Date Due (PM): 06/28/95 Proj #: C3M11Q N/L TARACORP

Date Due (Client): 06/30/95 P.O. #:

Mode: Mail Quot #:

| <u>Sample Id. No.</u>             | <u>Client Sample Name/Number</u> | <u>Matrix</u>                        | <u>Container</u>  | <u>Preservative</u> | <u>Date Collected</u> | <u>Temp</u> | <u>Tests</u>   |
|-----------------------------------|----------------------------------|--------------------------------------|-------------------|---------------------|-----------------------|-------------|--|
| 9506000321-001-01                 | WMW109-10GGW                     | GROUND WATER                         | 1-1 LITER PLASTIC | Nitric Acid         | 06/16/95              |             | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>CADMIUM-SW-846 6010A<br>CHROMIUM-SW-846 6010A<br>SILVER-SW-846 6010A<br>MERCURY-SW-846 7470A<br>NICKEL-SW-846 6010A<br>COPPER-SW-846 6010A<br>TOTAL BERYLLIUM-SW-846 6010A<br>ZINC-SW-846 6010A |
| 9506000321-002-01                 | WMW109920GGW                     | Sample Instructions:<br>GROUND WATER | 1-1 LITER PLASTIC | Nitric Acid         | 06/16/95              |             | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>CADMIUM-SW-846 6010A<br>CHROMIUM-SW-846 6010A<br>SILVER-SW-846 6010A<br>MERCURY-SW-846 7470A<br>NICKEL-SW-846 6010A<br>COPPER-SW-846 6010A<br>TOTAL BERYLLIUM-SW-846 6010A<br>ZINC-SW-846 6010A |
| 9506000321-003-01                 | WMW110-10GGW                     | Sample Instructions:<br>GROUND WATER | 1-1 LITER PLASTIC | Nitric Acid         | 06/16/95              |             | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>CADMIUM-SW-846 6010A<br>CHROMIUM-SW-846 6010A<br>SILVER-SW-846 6010A<br>MERCURY-SW-846 7470A<br>NICKEL-SW-846 6010A<br>COPPER-SW-846 6010A<br>TOTAL BERYLLIUM-SW-846 6010A<br>ZINC-SW-846 6010A |
| MATRIX SPIKE<br>9506000321-003-02 | WMW110-10GGWM                    | Sample Instructions:<br>GROUND WATER | 1-1 LITER PLASTIC | Nitric Acid         | 06/16/95              |             | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>CADMIUM-SW-846 6010A<br>CHROMIUM-SW-846 6010A<br>SILVER-SW-846 6010A<br>MERCURY-SW-846 7470A<br>NICKEL-SW-846 6010A<br>COPPER-SW-846 6010A<br>TOTAL BERYLLIUM-SW-846 6010A                      |

**INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST**

Page 2

coc : 010204  
 Woodward-Clyde Consultants - W088  
 2318 Millpark Drive  
 Maryland Heights, Mo. 63043  
 Eric Page

Date Received: 06/16/95

Date Logged: 06/16/95

Status: Normal/LEVEL 5

Date Due (PM): 06/28/95 Proj #: C3M11Q N/L TARACORP

Date Due (Client): 06/30/95 P.O. #:

Mode: Mail Quot #:

| <u>Sample Id. No.</u>                       | <u>Client Sample Name/Number</u> | <u>Matrix</u>                        | <u>Container</u>  | <u>Preservative</u> | <u>Date Collected</u> | <u>Temp</u> | <u>Tests</u>  |
|---|----------------------------------|--------------------------------------|-------------------|---------------------|-----------------------|-------------|---|
| 9506000321-003-02                           | WMW110-10GGWM                    | GROUND WATER                         | 1-1 LITER PLASTIC | Nitric Acid         | 06/16/95              |             | ZINC-SW-846 6010A   |
| MATRIX SPIKE DUPLICATE<br>9506000321-003-03 | WMW110-10GGWX                    | Sample Instructions:<br>GROUND WATER | 1-1 LITER PLASTIC | Nitric Acid         | 06/16/95              |             | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>CADMIUM-SW-846 6010A<br>CHROMIUM-SW-846 6010A<br>SILVER-SW-846 6010A<br>MERCURY-SW-846 7470A<br>NICKEL-SW-846 6010A<br>COPPER-SW-846 6010A<br>TOTAL BERYLLIUM-SW-846 6010A<br>ZINC-SW-846 6010A  |
| 9506000321-004-01                           | WMW107-DOGGW                     | Sample Instructions:<br>GROUND WATER | 1-1 LITER PLASTIC | Nitric Acid         | 06/16/95              |             | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>CADMIUM-SW-846 6010A<br>CHROMIUM-SW-846 6010A<br>SILVER-SW-846 6010A<br>MERCURY-SW-846 7470A<br>NICKEL-SW-846 6010A<br>COPPER-SW-846 6010A<br>TOTAL BERYLLIUM-SW-846 6010A<br>ZINC-SW-846 6010A  |
| 9506000321-004-02                           | WMW107-DOGGWF                    | Sample Instructions:<br>GROUND WATER | 1-1 LITER PLASTIC | Nitric Acid         | 06/16/95              |             | DISSOLVED ANTIMONY-SW-846 7041<br>DISSOLVED ARSENIC-SW-846 7060<br>DISSOLVED BERYLLIUM-SW-846 6010A<br>Diss. CADMIUM-SW-846 6010A<br>Diss. CHROMIUM-SW-846 6010A<br>Diss. COPPER-SW-846 6010A<br>Diss. LEAD-SW-846 7421<br>Diss. MERCURY-SW-846 7470<br>Diss. NICKEL-SW-846 6010A<br>Diss. SELENIUM-SW-846 7740<br>Diss. SILVER-SW-846 6010A<br>Diss. THALLIUM-SW-846 7841<br>Diss. ZINC-SW-846 6010A |
| 9506000321-005-01                           | WMW107-DOGGWDF                   | Sample Instructions:<br>GROUND WATER | 1-1 LITER PLASTIC | Nitric Acid         | 06/16/95              |             | DISSOLVED ANTIMONY-SW-846 7041<br>DISSOLVED ARSENIC-SW-846 7060<br>DISSOLVED BERYLLIUM-SW-846 6010A<br>Diss. CADMIUM-SW-846 6010A<br>Diss. CHROMIUM-SW-846 6010A<br>Diss. COPPER-SW-846 6010A<br>Diss. LEAD-SW-846 7421<br>Diss. MERCURY-SW-846 7470<br>Diss. NICKEL-SW-846 6010A<br>Diss. SELENIUM-SW-846 7740   |

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 3

COC : 010204

Woodward-Clyde Consultants - W088  
 2318 Millpark Drive  
 Maryland Heights, Mo. 63043  
 Eric Page

Date Received: 06/16/95

Date Logged: 06/16/95

Status: Normal/LEVEL 5

Date Due (PM): 06/28/95 Proj #: C3M11Q N/L TARACORP

Date Due (Client): 06/30/95 P.O. #:

Mode: Mail Quot #:

| <u>Sample Id. No.</u>                       | <u>Client Sample Name/Number</u> | <u>Matrix</u>                        | <u>Container</u>  | <u>Preservative</u> | <u>Date Collected</u> | <u>Temp</u> | <u>Tests</u>   |
|---|----------------------------------|--------------------------------------|-------------------|---------------------|-----------------------|-------------|--|
| 9506000321-005-01                           | WMW107-DOGGWDF                   | GROUND WATER                         | 1-1 LITER PLASTIC | Nitric Acid         | 06/16/95              |             | Diss. SILVER-SW-846 6010A<br>Diss. THALLIUM-SW-846 7841<br>Diss. ZINC-SW-846 6010A   |
| 9506000321-005-02                           | WMW107-DOGGWD                    | Sample Instructions:<br>GROUND WATER | 1-1 LITER PLASTIC | Nitric Acid         | 06/16/95              |             | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>CADMIUM-SW-846 6010A<br>CHROMIUM-SW-846 6010A<br>SILVER-SW-846 6010A<br>MERCURY-SW-846 7470A<br>NICKEL-SW-846 6010A<br>COPPER-SW-846 6010A<br>TOTAL BERYLLIUM-SW-846 6010A<br>ZINC-SW-846 6010A |
| MATRIX SPIKE<br>9506000321-005-03           | WMW107-DOGGWM                    | Sample Instructions:<br>GROUND WATER | 1-1 LITER PLASTIC | Nitric Acid         | 06/16/95              |             | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>CADMIUM-SW-846 6010A<br>CHROMIUM-SW-846 6010A<br>SILVER-SW-846 6010A<br>MERCURY-SW-846 7470A<br>NICKEL-SW-846 6010A<br>COPPER-SW-846 6010A<br>TOTAL BERYLLIUM-SW-846 6010A<br>ZINC-SW-846 6010A |
| MATRIX SPIKE DUPLICATE<br>9506000321-005-04 | WMW107-DOGGWX                    | Sample Instructions:<br>GROUND WATER | 1-1 LITER PLASTIC | Nitric Acid         | 06/16/95              |             | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>CADMIUM-SW-846 6010A<br>CHROMIUM-SW-846 6010A<br>SILVER-SW-846 6010A<br>MERCURY-SW-846 7470A<br>NICKEL-SW-846 6010A<br>COPPER-SW-846 6010A<br>TOTAL BERYLLIUM-SW-846 6010A<br>ZINC-SW-846 6010A |
| 9506000321-006-01                           | WMW108-SOGGW                     | Sample Instructions:<br>GROUND WATER | 1-1 LITER PLASTIC | Nitric Acid         | 06/16/95              |             | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>CADMIUM-SW-846 6010A<br>CHROMIUM-SW-846 6010A   |

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 4

coc : 010204  
Woodward-Clyde Consultants - W088  
2318 Millpark Drive  
Maryland Heights, Mo. 63043  
Eric Page

Date Received: 06/16/95

Date Logged: 06/16/95

Status: Normal/LEVEL 5

Date Due (PM): 06/28/95 Proj #: C3M11Q N/L TARACORP

Date Due (Client): 06/30/95 P.O. #:

Mode: Mail Quot #:

| <u>Sample Id. No.</u> | <u>Client Sample Name/Number</u> | <u>Matrix</u> | <u>Container</u>  | <u>Preservative</u> | <u>Date</u>      |             |   |
|-----------------------|----------------------------------|---------------|-------------------|---------------------|------------------|-------------|---|
|                       |                                  |               |                   |                     | <u>Collected</u> | <u>Temp</u> | <u>Tests</u>  |
| 9506000321-006-01     | WMW108-SOGGW                     | GROUND WATER  | 1-1 LITER PLASTIC | Nitric Acid         | 06/16/95         |             | SILVER-SW-846 6010A<br>MERCURY-SW-846 7470A<br>NICKEL-SW-846 6010A<br>COPPER-SW-846 6010A<br>TOTAL BERYLLIUM-SW-846 6010A<br>ZINC-SW-846 6010A  |
| 9506000321-006-02     | WMW108-SOGGWF                    | GROUND WATER  | 1-1 LITER PLASTIC | Nitric Acid         | 06/16/95         |             | DISSOLVED ANTIMONY-SW-846 7041<br>DISSOLVED ARSENIC-SW-846 7060<br>DISSOLVED BERYLLIUM-SW-846 6010A<br>Diss. CADMIUM-SW-846 6010A<br>Diss. CHROMIUM-SW-846 6010A<br>Diss. COPPER-SW-846 6010A<br>Diss. LEAD-SW-846 7421<br>Diss. MERCURY-SW-846 7470<br>Diss. NICKEL-SW-846 6010A<br>Diss. SELENIUM-SW-846 7740<br>Diss. SILVER-SW-846 6010A<br>Diss. THALLIUM-SW-846 7841<br>Diss. ZINC-SW-846 6010A |

Sample Instructions:

Items Transferred  
13

Relinquished By

Date  
06/16/95 PM Signature:

Anne Morris  
Client Services Rep.

Anne Morris  
*Anne Morris*

Logged In By  
Phyllis Woods  
Login Coordinator

Date  
06/16/95 Time  
16:41:22

CHAIN OF CUSTODY RECORD

WOODWARD-CLYDE CONSULTANTS  
2318 MILLPARK DR.  
MARYLAND HEIGHTS, MISSOURI 63043  
314-429-0100

SHEET 1 of 8

| PROJECT NO:  | PROJECT NAME: | NO. OF CONTAINERS                | CONTAINER DESCRIPTION / ANALYSES REQUESTED   |   |  |                                  |  | REMARKS |
|--|---------------|----------------------------------|--|---|--|----------------------------------|--|---------|
|  |               |                                  | METHODS<br>1+ POLY<br>HINDS                  |   |  |                                  |  |         |
| C3n11Q   | NL/TARSCORP   |                                  |  |   |  |                                  |  |         |
| SAMPLER'S: (Signature)<br><i>W. Rabolt</i>             |               |                                  |  |   |  |                                  |  |         |
| DATE   | TIME          | SAMPLE I.D. NUMBER               |  |   |  |                                  |  |         |
| 6/16/95  | 1010          | WMW109-10GGW                     | 1  | 1 |  |                                  |  |         |
|  | 1045          | WMW109920GGW                     | 1  | 1 |  |                                  |  |         |
|  | 1125          | WMW110-10GGW                     | 1  | 1 |  |                                  |  |         |
|  | 1125          | WMW110-10GGWm → (ms.)            | 1  | 1 |  |                                  |  |         |
|  | 1125          | WMW110-10GGWX → (msd)            | 1  | 1 |  |                                  |  |         |
|  | 1310          | WMW107-DOGGW                     | 1  | 1 |  |                                  |  |         |
|  | 1310          | WMW107-DOGGWF                    | 1  | 1 |  |                                  |  |         |
|  | 1310          | WMW107-DOGGWD                    | 1  | 1 |  |                                  |  |         |
|  | 1310          | WMW107-DOGA WDF                  | 1  | 1 |  |                                  |  |         |
|  | 1310          | WMW107-DOGGWM (ms)               | 1  | 1 |  |                                  |  |         |
| RELINQUISHED BY: (Signature)<br><i>Wendy E. Rabolt</i> |               | DATE / TIME <del>6/16 3:35</del> | RECEIVED BY: (Signature)<br><i>El. J. H.</i> |   |  | DATE / TIME <del>6/16 3:25</del> |  |         |
| RELINQUISHED BY: (Signature)                           |               | DATE / TIME<br>6-16-345          | RECEIVED AT LAB BY: (Signature)              |   |  | DATE / TIME<br>6-16-95-345       |  |         |
| METHOD OF SHIPMENT:                                    |               |                                  | AIRBILL NO:                                  |   |  |                                  |  |         |

CHAIN OF CUSTODY RECORDSHEET 2 of —

WOODWARD-CLYDE CONSULTANTS  
2318 MILLPARK DR.  
MARYLAND HEIGHTS, MISSOURI 63043  
314-429-0100

| PROJECT NO:                  |      | PROJECT NAME:        |  | NO. OF CONTAINERS | CONTAINER DESCRIPTION / ANALYSES REQUESTED |             |    |    |    | REMARKS                         |    |  |
|------------------------------|------|----------------------|--|-------------------|--|-------------|----|----|----|---------------------------------|----|--|
| CBM11Q                       |      | NL/TACCORD           |  |                   | METALS                                     | PCP         | Hg | As | Cr |                                 | Pb |  |
| SAMPLER'S: (Signature)       |      | <i>Wendy Rambolt</i> |  |                   |  |             |    |    |    |                                 |    |  |
| DATE                         | TIME | SAMPLE I.D. NUMBER   |  |                   |  |             |    |    |    |                                 |    |  |
| 6/16/95                      | 1310 | WMW107-DOGGWX (msd)  |  | 1                 | 1  |             |    |    |    |                                 |    |  |
|                              | 1400 | WMW108-SOGGW         |  | 1                 | 1  |             |    |    |    |                                 |    |  |
| ↓                            | 1400 | WMW108 - SOGGWF      |  | 1                 | 1  |             |    |    |    |                                 |    |  |
|                              |      |                      |  |                   |  |             |    |    |    |                                 |    |  |
|                              |      |                      |  |                   |  |             |    |    |    |                                 |    |  |
|                              |      |                      |  |                   |  |             |    |    |    |                                 |    |  |
|                              |      |                      |  |                   |  |             |    |    |    |                                 |    |  |
|                              |      |                      |  |                   |  |             |    |    |    |                                 |    |  |
|                              |      |                      |  |                   |  |             |    |    |    |                                 |    |  |
| RELINQUISHED BY: (Signature) |      |                      |  | DATE / TIME       | <i>6-16-95</i>                             |             |    |    |    | RECEIVED BY: (Signature)        |    |  |
| <i>Wendy Rambolt</i>         |      |                      |  |                   |  |             |    |    |    | <i>CJ</i>                       |    |  |
| RELINQUISHED BY: (Signature) |      |                      |  | DATE / TIME       | <i>6-16-95</i>                             |             |    |    |    | RECEIVED AT LAB BY: (Signature) |    |  |
|                              |      |                      |  |                   |  |             |    |    |    |                                 |    |  |
| METHOD OF SHIPMENT:          |      |                      |  |                   |  | AIRBILL NO: |    |    |    |                                 |    |  |

coc : 010204  
Woodward-Clyde Consultants - W088  
2318 Millpark Drive  
Maryland Heights, Mo. 63043  
Eric Page

**INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST**

Page 1

Date Received: 06/16/95

Date Logged: 06/16/95

Status: Normal/LEVEL 5

Date Due (PM): 06/28/95 Proj #: C3M11Q N/L TARACORP  
Date Due (Client): 06/30/95 P.O. #:  
Mode: Mail Quot #:

✓ MAM  
7-11-95

## METALS/WET CHEMISTRY DATA ASSESSMENT

PROJECT NO. C3M11Q1  
LABORATORY ENVIROMETRICS  
LAB PROJECT NO. 82656  
NO. OF SAMPLES/  
MATRIX 13 / WATER

SITE NL / TARACORP  
REVIEWER Woodward-Clyde Consultants  
REVIEWER'S NAME WENDY REINBOLD  
COMPLETION DATE 07/10/95

### DATA ASSESSMENT WORKSHEET

|                       | <u>6010</u><br>Meth #<br>ICP/AA | <u>METALS</u><br>Meth #<br>GFI/AA | Meth # | Meth # | Meth # |
|-----------------------|---------------------------------|-----------------------------------|--------|--------|--------|
| 1. HOLDING TIMES      | <u>✓</u>                        | <u>✓</u>                          | —      | —      | —      |
| 2. BLANKS             | <u>✓</u>                        | <u>(1)</u>                        | —      | —      | —      |
| 3. SCS                | <u>✓</u>                        | <u>✓</u>                          | —      | —      | —      |
| 4. DCS                | <u>NA</u>                       | <u>NA</u>                         | —      | —      | —      |
| 5. DILUTION           | <u>✓</u>                        | <u>✓</u>                          | —      | —      | —      |
| 6. OTHER QC           | <u>NA</u>                       | <u>NA</u>                         | —      | —      | —      |
| 7. OVERALL ASSESSMENT | <u>O</u>                        | <u>O</u>                          | —      | —      | —      |

O = Data had no problems/or qualified due to minor problems.

M = Data qualified due to major problems.

Z = Data unacceptable.

X = Problems, but do not affect data.

ACTION ITEMS: (1) ANTIMONY AND SELENIUM DETECTED IN THE METHOD BLANK. ANALYTICAL RESULTS LESS THAN 5X THE BLANK RESULT ARE QUANTIFIED AS NON-DETECT (N). LAB HAS ALREADY QUANTIFIED THESE AS "B" FOR ARSENIC AND ANTIMONY BECAUSE THE RESULT WAS GREATER THAN THE METHOD DETECTION LIMIT BUT LESS THAN THE PRACTICAL QUANTIFICATION LIMIT. WCC MARKED THESE AS NON-DETECT (N).

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32656  
PO: ---  
PROJECT NO: C2M11Q1, NL/TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMM105-SOGGW / SOGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-001

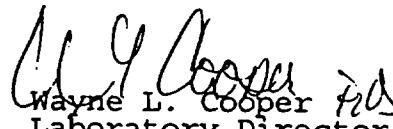
DATE COLLECTED: 06/15/95 09:40

DATE RECEIVED: 06/15/95 16:08

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u>  | <u>ANALYST</u> |
|-----------------------|---------------------------|-----------------|----------------|
| - DISSOLVED ANTIMONY  | SW-846 7041               | <0.0012 mg/L    | 06/29/95 D.S.  |
| DISSOLVED ARSENIC     | SW-846 7060               | 0.00130 mg/L BU | 06/29/95 D.S.  |
| DISSOLVED BERYLLIUM   | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| DISSOLVED CADMIUM     | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| DISSOLVED CHROMIUM    | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| DISSOLVED COPPER      | SW-846 6010A              | <0.025 mg/L     | 06/23/95 R.D.  |
| - DISSOLVED LEAD      | SW-846 7421               | 0.00480 mg/L    | 06/23/95 D.S.  |
| DISSOLVED MERCURY     | SW-846 7470               | <0.0002 mg/L    | 06/23/95 J.N.  |
| DISSOLVED NICKEL      | SW-846 6010A              | <0.040 mg/L     | 06/23/95 R.D.  |
| - DISSOLVED SELENIUM  | SW-846 7740               | 0.00380 mg/L BU | 06/30/95 D.S.  |
| DISSOLVED SILVER      | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| DISSOLVED THALLIUM    | SW-846 7841               | <0.0010 mg/L    | 06/29/95 D.S.  |
| DISSOLVED ZINC        | SW-846 6010A              | <0.020 mg/L     | 06/23/95 R.D.  |
| - TOTAL ANTIMONY      | SW-846 7041               | 0.00520 mg/L BU | 06/29/95 D.S.  |
| TOTAL ARSENIC         | SW-846 7060               | 0.00140 mg/L BU | 06/29/95 D.S.  |
| TOTAL BERYLLIUM       | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| - TOTAL CADMIUM       | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| TOTAL CHROMIUM        | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| TOTAL COPPER          | SW-846 6010A              | <0.025 mg/L     | 06/23/95 R.D.  |
| - TOTAL LEAD          | SW-846 7421               | 0.0128 mg/L     | 06/23/95 D.S.  |
| TOTAL MERCURY         | SW-846 7470A              | <0.0002 mg/L    | 06/23/95 J.N.  |
| TOTAL NICKEL          | SW-846 6010A              | <0.040 mg/L     | 06/23/95 R.D.  |
| TOTAL SELENIUM        | SW-846 7740               | 0.00500 mg/L BU | 06/30/95 D.S.  |
| - TOTAL SILVER        | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| TOTAL THALLIUM        | SW-846 7841               | 0.00120 mg/L    | 06/29/95 D.S.  |

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995

  
Wayne L. Cooper, P.E.  
Laboratory Director

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32656

PO: ---

PROJECT NO: C2M11Q1, NL/TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMM105-SOGGW / SOGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-001

DATE COLLECTED: 06/15/95 09:40

DATE RECEIVED: 06/15/95 16:08

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u> | <u>ANALYST</u> |
|-----------------------|---------------------------|----------------|----------------|
| TOTAL ZINC            | SW-846 6010A              | 0.0250 mg/L    | 06/23/95 R.D.  |

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995

  
Wayne L. Cooper, P.E.  
Laboratory Director

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32656

PO: ---

PROJECT NO: C2M11Q1, NL/TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMM106-S-0GGW / SOGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-002

DATE COLLECTED: 06/15/95 10:25

DATE RECEIVED: 06/15/95 16:10

| TEST PERFORMED      | METHOD OF ANALYSIS | RESULTS         | ANALYST       |
|---------------------|--------------------|-----------------|---------------|
| DISSOLVED ANTIMONY  | SW-846 7041        | <0.0012 mg/L    | 06/29/95 D.S. |
| DISSOLVED ARSENIC   | SW-846 7060        | 0.00110 mg/L Bu | 06/29/95 D.S. |
| DISSOLVED BERYLLIUM | SW-846 6010A       | <0.005 mg/L     | 06/23/95 R.D. |
| DISSOLVED CADMIUM   | SW-846 6010A       | <0.005 mg/L     | 06/23/95 R.D. |
| DISSOLVED CHROMIUM  | SW-846 6010A       | <0.010 mg/L     | 06/23/95 R.D. |
| DISSOLVED COPPER    | SW-846 6010A       | <0.025 mg/L     | 06/23/95 R.D. |
| DISSOLVED LEAD      | SW-846 7421        | 0.00250 mg/L    | 06/23/95 D.S. |
| DISSOLVED MERCURY   | SW-846 7470        | <0.0002 mg/L    | 06/23/95 J.N. |
| DISSOLVED NICKEL    | SW-846 6010A       | <0.040 mg/L     | 06/23/95 R.D. |
| DISSOLVED SELENIUM  | SW-846 7740        | 0.00780 mg/L    | 07/03/95 D.S. |
| DISSOLVED SILVER    | SW-846 6010A       | <0.010 mg/L     | 06/23/95 R.D. |
| DISSOLVED THALLIUM  | SW-846 7841        | <0.0010 mg/L    | 06/29/95 D.S. |
| DISSOLVED ZINC      | SW-846 6010A       | <0.020 mg/L     | 06/23/95 R.D. |
| TOTAL ANTIMONY      | SW-846 7041        | 0.00420 mg/L Bu | 06/29/95 D.S. |
| TOTAL ARSENIC       | SW-846 7060        | 0.00670 mg/L Bu | 06/29/95 D.S. |
| TOTAL BERYLLIUM     | SW-846 6010A       | <0.005 mg/L     | 06/23/95 R.D. |
| TOTAL CADMIUM       | SW-846 6010A       | <0.005 mg/L     | 06/23/95 R.D. |
| TOTAL CHROMIUM      | SW-846 6010A       | 0.0190 mg/L     | 06/23/95 R.D. |
| TOTAL COPPER        | SW-846 6010A       | <0.025 mg/L     | 06/23/95 R.D. |
| TOTAL LEAD          | SW-846 7421        | 0.177 mg/L      | 06/28/95 D.S. |
| TOTAL MERCURY       | SW-846 7470A       | <0.0002 mg/L    | 06/23/95 J.N. |
| TOTAL NICKEL        | SW-846 6010A       | <0.040 mg/L     | 06/23/95 R.D. |
| TOTAL SELENIUM      | SW-846 7740        | 0.00610 mg/L    | 07/03/95 D.S. |
| TOTAL SILVER        | SW-846 6010A       | <0.010 mg/L     | 06/23/95 R.D. |
| TOTAL THALLIUM      | SW-846 7841        | <0.0010 mg/L    | 06/29/95 D.S. |

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995

  
Wayne L. Cooper P.E.  
Laboratory Director

- Woodward-Clyde Consultants  
- 2318 Millpark Drive  
Maryland Heights, Mo. 63043

- ATTN: Eric Page

- INVOICE: 32656

PO: ---

- PROJECT NO: C2M11Q1, NL/TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

- SAMPLE ID: WMM106-S-0GGW / SOGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-002

DATE COLLECTED: 06/15/95 10:25

- DATE RECEIVED: 06/15/95 16:10

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u> | <u>ANALYST</u> |
|-----------------------|---------------------------|----------------|----------------|
| TOTAL ZINC            | SW-846 6010A              | 0.0820 mg/L    | 06/23/95 R.D.  |

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995

  
Wayne L. Cooper RL  
Laboratory Director

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32656  
PO: ---  
PROJECT NO: C2M11Q1, NL/TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMM106-DOGGW / DOGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-003

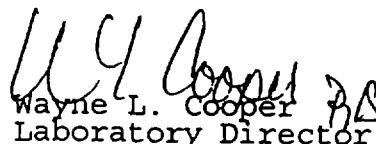
DATE COLLECTED: 06/15/95 10:25

DATE RECEIVED: 06/15/95 16:11

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u>  | <u>ANALYST</u> |
|-----------------------|---------------------------|-----------------|----------------|
| DISSOLVED ANTIMONY    | SW-846 7041               | <0.0012 mg/L    | 06/29/95 D.S.  |
| DISSOLVED ARSENIC     | SW-846 7060               | 0.00170 mg/L BU | 06/29/95 D.S.  |
| DISSOLVED BERYLLIUM   | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| DISSOLVED CADMIUM     | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| DISSOLVED CHROMIUM    | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| DISSOLVED COPPER      | SW-846 6010A              | <0.025 mg/L     | 06/23/95 R.D.  |
| DISSOLVED LEAD        | SW-846 7421               | <0.0009 mg/L    | 06/23/95 D.S.  |
| DISSOLVED MERCURY     | SW-846 7470               | <0.0002 mg/L    | 06/23/95 J.N.  |
| DISSOLVED NICKEL      | SW-846 6010A              | <0.040 mg/L     | 06/23/95 R.D.  |
| DISSOLVED SELENIUM    | SW-846 7740               | 0.00980 mg/L    | 07/03/95 D.S.  |
| DISSOLVED SILVER      | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| DISSOLVED THALLIUM    | SW-846 7841               | <0.001 mg/L     | 06/29/95 D.S.  |
| DISSOLVED ZINC        | SW-846 6010A              | <0.020 mg/L     | 06/23/95 R.D.  |
| TOTAL ANTIMONY        | SW-846 7041               | <0.0012 mg/L    | 06/29/95 D.S.  |
| TOTAL ARSENIC         | SW-846 7060               | 0.00180 mg/L BU | 06/29/95 D.S.  |
| TOTAL BERYLLIUM       | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| TOTAL CADMIUM         | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| TOTAL CHROMIUM        | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| TOTAL COPPER          | SW-846 6010A              | <0.025 mg/L     | 06/23/95 R.D.  |
| TOTAL LEAD            | SW-846 7421               | <0.0009 mg/L    | 06/23/95 D.S.  |
| TOTAL MERCURY         | SW-846 7470A              | <0.0002 mg/L    | 06/23/95 J.N.  |
| TOTAL NICKEL          | SW-846 6010A              | <0.040 mg/L     | 06/23/95 R.D.  |
| TOTAL SELENIUM        | SW-846 7740               | 0.00890 mg/L    | 07/03/95 D.S.  |
| TOTAL SILVER          | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| TOTAL THALLIUM        | SW-846 7841               | <0.0010 mg/L    | 06/29/95 D.S.  |

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995

  
Wayne L. Cooper, P.E.  
Laboratory Director

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32656

PO: ---

PROJECT NO: C2M11Q1, NL/TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMMW106-DOGGW / DOGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-003

DATE COLLECTED: 06/15/95 10:25

DATE RECEIVED: 06/15/95 16:11

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u> | <u>ANALYST</u> |
|-----------------------|---------------------------|----------------|----------------|
| TOTAL ZINC            | SW-846 6010A              | <0.020 mg/L    | 06/23/95 R.D.  |

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995

  
Wayne L. Cooper, PhD  
Laboratory Director

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32656

PO: ---

PROJECT NO: C2M11Q1, NL/TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMM107-SOGGW / SOGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-004

DATE COLLECTED: 06/15/95 11:35

DATE RECEIVED: 06/15/95 16:12

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u>  | <u>ANALYST</u> |
|-----------------------|---------------------------|-----------------|----------------|
| DISSOLVED ANTIMONY    | SW-846 7041               | <0.0012 mg/L    | 06/29/95 D.S.  |
| DISSOLVED ARSENIC     | SW-846 7060               | 0.00190 mg/L Bu | 06/29/95 D.S.  |
| DISSOLVED BERYLLIUM   | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| DISSOLVED CADMIUM     | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| DISSOLVED CHROMIUM    | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| DISSOLVED COPPER      | SW-846 6010A              | <0.025 mg/L     | 06/23/95 R.D.  |
| DISSOLVED LEAD        | SW-846 7421               | <0.0009 mg/L    | 06/23/95 D.S.  |
| DISSOLVED MERCURY     | SW-846 7470               | <0.0002 mg/L    | 06/23/95 J.N.  |
| DISSOLVED NICKEL      | SW-846 6010A              | <0.040 mg/L     | 06/23/95 R.D.  |
| DISSOLVED SELENIUM    | SW-846 7740               | 0.00660 mg/L    | 07/03/95 D.S.  |
| DISSOLVED SILVER      | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| DISSOLVED THALLIUM    | SW-846 7841               | <0.001 mg/L     | 06/29/95 D.S.  |
| DISSOLVED ZINC        | SW-846 6010A              | <0.020 mg/L     | 06/23/95 R.D.  |
| TOTAL ANTIMONY        | SW-846 7041               | 0.00150 mg/L Bu | 06/29/95 D.S.  |
| TOTAL ARSENIC         | SW-846 7060               | 0.00530 mg/L Bu | 06/29/95 D.S.  |
| TOTAL BERYLLIUM       | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| TOTAL CADMIUM         | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| TOTAL CHROMIUM        | SW-846 6010A              | 0.0450 mg/L     | 06/23/95 R.D.  |
| TOTAL COPPER          | SW-846 6010A              | 0.0350 mg/L     | 06/23/95 R.D.  |
| TOTAL LEAD            | SW-846 7421               | 0.0247 mg/L     | 06/23/95 D.S.  |
| TOTAL MERCURY         | SW-846 7470A              | 0.0002000 mg/L  | 06/23/95 J.N.  |
| TOTAL NICKEL          | SW-846 6010A              | 0.0670 mg/L     | 06/23/95 R.D.  |
| TOTAL SELENIUM        | SW-846 7740               | 0.00610 mg/L    | 07/03/95 D.S.  |
| TOTAL SILVER          | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| TOTAL THALLIUM        | SW-846 7841               | <0.0010 mg/L    | 06/29/95 D.S.  |

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995

  
Wayne L. Cooper, P.E.  
Laboratory Director

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32656

PO: ---

PROJECT NO: C2M11Q1, NL/TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMM107-S0GGW / SOGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED  
METALS

LAB ID: 9506000291-004

DATE COLLECTED: 06/15/95 11:35

DATE RECEIVED: 06/15/95 16:12

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u> | <u>ANALYST</u> |
|-----------------------|---------------------------|----------------|----------------|
| TOTAL ZINC            | SW-846 6010A              | 0.149 mg/L     | 06/23/95 R.D.  |

B = Reported value is greater than the  
Method Detection Limit (MDL) but less than  
the Practical Quantitation Limit (PQL).

July 5, 1995

  
Wayne L. Cooper, PLS  
Laboratory Director

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32656  
PO: ---  
PROJECT NO: C2M11Q1, NL/TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMW112-10GGWB  
LAB ID: 9506000291-005  
DATE COLLECTED: 06/15/95 11:40  
DATE RECEIVED: 06/15/95 16:13

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u>       | <u>ANALYST</u> |
|-----------------------|---------------------------|----------------------|----------------|
| TOTAL ANTIMONY        | SW-846 7041               | <0.0012 mg/L         | 06/29/95 D.S.  |
| TOTAL ARSENIC         | SW-846 7060               | <0.0004 mg/L         | 06/29/95 D.S.  |
| TOTAL BERYLLIUM       | SW-846 6010A              | <0.005 mg/L          | 06/23/95 R.D.  |
| TOTAL CADMIUM         | SW-846 6010A              | <0.005 mg/L          | 06/23/95 R.D.  |
| TOTAL CHROMIUM        | SW-846 6010A              | <0.010 mg/L          | 06/23/95 R.D.  |
| TOTAL COPPER          | SW-846 6010A              | <0.025 mg/L          | 06/23/95 R.D.  |
| TOTAL LEAD            | SW-846 7421               | <0.0009 mg/L         | 06/23/95 D.S.  |
| TOTAL MERCURY         | SW-846 7470A              | <0.0002 mg/L         | 06/23/95 J.N.  |
| TOTAL NICKEL          | SW-846 6010A              | <0.040 mg/L          | 06/23/95 R.D.  |
| TOTAL SELENIUM        | SW-846 7740               | 0.0009 mg/L <i>u</i> | 06/30/95 D.S.  |
| TOTAL SILVER          | SW-846 6010A              | <0.010 mg/L          | 06/23/95 R.D.  |
| TOTAL THALLIUM        | SW-846 7841               | <0.001 mg/L          | 06/29/95 D.S.  |
| TOTAL ZINC            | SW-846 6010A              | <0.020 mg/L          | 06/23/95 R.D.  |

July 5, 1995

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32656

PO: ---

PROJECT NO: C2M11Q1, NL/TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMM108-D0GGW / DOGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-006

DATE COLLECTED: 06/15/95 13:25

DATE RECEIVED: 06/15/95 16:15

| TEST PERFORMED      | METHOD OF ANALYSIS | RESULTS         | ANALYST       |
|---------------------|--------------------|-----------------|---------------|
| DISSOLVED ANTIMONY  | SW-846 7041        | <0.0012 mg/L    | 06/29/95 D.S. |
| DISSOLVED ARSENIC   | SW-846 7060        | 0.00280 mg/L BU | 06/29/95 D.S. |
| DISSOLVED BERYLLIUM | SW-846 6010A       | <0.005 mg/L     | 06/23/95 R.D. |
| DISSOLVED CADMIUM   | SW-846 6010A       | <0.005 mg/L     | 06/23/95 R.D. |
| DISSOLVED CHROMIUM  | SW-846 6010A       | <0.010 mg/L     | 06/23/95 R.D. |
| DISSOLVED COPPER    | SW-846 6010A       | <0.025 mg/L     | 06/23/95 R.D. |
| DISSOLVED LEAD      | SW-846 7421        | <0.0009 mg/L    | 06/23/95 D.S. |
| DISSOLVED MERCURY   | SW-846 7470        | <0.0002 mg/L    | 06/23/95 J.N. |
| DISSOLVED NICKEL    | SW-846 6010A       | 0.120 mg/L      | 06/23/95 R.D. |
| DISSOLVED SELENIUM  | SW-846 7740        | <0.0008 mg/L    | 07/03/95 D.S. |
| DISSOLVED SILVER    | SW-846 6010A       | <0.010 mg/L     | 06/23/95 R.D. |
| DISSOLVED THALLIUM  | SW-846 7841        | <0.0010 mg/L    | 06/29/95 D.S. |
| DISSOLVED ZINC      | SW-846 6010A       | 2.30 mg/L       | 06/23/95 R.D. |
| TOTAL ANTIMONY      | SW-846 7041        | <0.0012 mg/L    | 06/29/95 D.S. |
| TOTAL ARSENIC       | SW-846 7060        | 0.00320 mg/L BU | 06/29/95 D.S. |
| TOTAL BERYLLIUM     | SW-846 6010A       | <0.005 mg/L     | 06/23/95 R.D. |
| TOTAL CADMIUM       | SW-846 6010A       | 0.0460 mg/L     | 06/23/95 R.D. |
| TOTAL CHROMIUM      | SW-846 6010A       | <0.010 mg/L     | 06/23/95 R.D. |
| TOTAL COPPER        | SW-846 6010A       | <0.025 mg/L     | 06/23/95 R.D. |
| TOTAL LEAD          | SW-846 7421        | 0.00110 mg/L    | 06/23/95 D.S. |
| TOTAL MERCURY       | SW-846 7470A       | <0.0002 mg/L    | 06/23/95 J.N. |
| TOTAL NICKEL        | SW-846 6010A       | 0.137 mg/L      | 06/23/95 R.D. |
| TOTAL SELENIUM      | SW-846 7740        | <0.0008 mg/L    | 07/03/95 D.S. |
| TOTAL SILVER        | SW-846 6010A       | <0.010 mg/L     | 06/23/95 R.D. |
| TOTAL THALLIUM      | SW-846 7841        | <0.0010 mg/L    | 06/29/95 D.S. |

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995

  
Wayne L. Cooper, P.E.  
Laboratory Director

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32656

PO: ---

PROJECT NO: C2M11Q1, NL/TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMW108-D0GGW / DOGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-006

DATE COLLECTED: 06/15/95 13:25

DATE RECEIVED: 06/15/95 16:15

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u> | <u>ANALYST</u> |
|-----------------------|---------------------------|----------------|----------------|
| TOTAL ZINC            | SW-846 6010A              | 4.78 mg/L      | 06/23/95 R.D.  |

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995

  
Wayne L. Cooper, P.E.  
Laboratory Director

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32656

PO: ---

PROJECT NO: C2M11Q1, NL/TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMM104920GGW / OGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-007

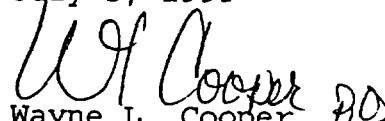
DATE COLLECTED: 06/15/95 14:10

DATE RECEIVED: 06/15/95 16:16

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u>  | <u>ANALYST</u> |
|-----------------------|---------------------------|-----------------|----------------|
| DISSOLVED ANTIMONY    | SW-846 7041               | <0.0012 mg/L    | 06/29/95 D.S.  |
| DISSOLVED ARSENIC     | SW-846 7060               | 0.00130 mg/L BU | 06/29/95 D.S.  |
| DISSOLVED BERYLLIUM   | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| DISSOLVED CADMIUM     | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| DISSOLVED CHROMIUM    | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| DISSOLVED COPPER      | SW-846 6010A              | <0.025 mg/L     | 06/23/95 R.D.  |
| DISSOLVED LEAD        | SW-846 7421               | 0.00140 mg/L    | 06/23/95 D.S.  |
| DISSOLVED MERCURY     | SW-846 7470               | <0.0002 mg/L    | 06/23/95 J.N.  |
| DISSOLVED NICKEL      | SW-846 6010A              | <0.040 mg/L     | 06/23/95 R.D.  |
| DISSOLVED SELENIUM    | SW-846 7740               | <0.0008 mg/L    | 07/03/95 D.S.  |
| DISSOLVED SILVER      | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| DISSOLVED THALLIUM    | SW-846 7841               | <0.001 mg/L     | 06/29/95 D.S.  |
| DISSOLVED ZINC        | SW-846 6010A              | <0.020 mg/L     | 06/23/95 R.D.  |
| TOTAL ANTIMONY        | SW-846 7041               | 0.00220 mg/L BU | 06/29/95 D.S.  |
| TOTAL ARSENIC         | SW-846 7060               | 0.00210 mg/L BU | 06/29/95 D.S.  |
| TOTAL BERYLLIUM       | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| TOTAL CADMIUM         | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| TOTAL CHROMIUM        | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| TOTAL COPPER          | SW-846 6010A              | <0.025 mg/L     | 06/23/95 R.D.  |
| TOTAL LEAD            | SW-846 7421               | 0.186 mg/L      | 06/23/95 D.S.  |
| TOTAL MERCURY         | SW-846 7470A              | <0.0002 mg/L    | 06/23/95 J.N.  |
| TOTAL NICKEL          | SW-846 6010A              | <0.040 mg/L     | 06/23/95 R.D.  |
| TOTAL SELENIUM        | SW-846 7740               | <0.0008 mg/L    | 07/03/95 D.S.  |
| TOTAL SILVER          | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| TOTAL THALLIUM        | SW-846 7841               | <0.001 mg/L     | 06/29/95 D.S.  |

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995

  
Wayne L. Cooper, PhD  
Laboratory Director

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32656  
PO: ---  
PROJECT NO: C2M11Q1, NL/TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

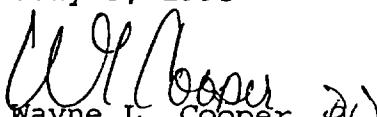
SAMPLE ID: WMW10492OGGW / OGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-007  
DATE COLLECTED: 06/15/95 14:10  
DATE RECEIVED: 06/15/95 16:16

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u> | <u>ANALYST</u> |
|-----------------------|---------------------------|----------------|----------------|
| TOTAL ZINC            | SW-846 6010A              | <0.020 mg/L    | 06/23/95 R.D.  |

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995

  
Wayne L. Cooper AD  
Laboratory Director

WOODWARD-CLYDE CONSULTANTS  
2318 MILLPARK DRIVE  
MARYLAND HEIGHTS, MO 63043

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

ATTN: ERIC PAGE

INVOICE # 32656  
PROJECT # C2M11Q1, NL/TARACORP

## PREPARATION BLANK

### GRAPHITE FURNACE ATOMIC ABSORPTION (UNITS - mg/l)

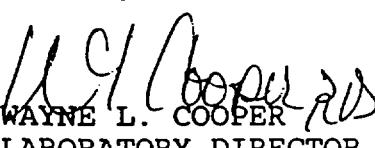
| <u>ELEMENT</u> | <u>RESULT</u> |
|----------------|---------------|
| ANTIMONY       | 0.0057        |
| ARSENIC        | <0.0004       |
| LEAD           | <0.0009       |
| SELENIUM       | 0.0012        |
| THALLIUM       | <0.0010       |

## LABORATORY CONTROL SAMPLE

### GRAPHIC FURNACE ATOMIC ABSORPTION (UNITS - mg/l)

| <u>ELEMENT</u> | <u>VALUE</u> | <u>RESULT</u> | <u>%RECOVERY</u> |
|----------------|--------------|---------------|------------------|
| ANTIMONY       | 0.100        | 0.1025        | 102.5            |
| ARSENIC        | 0.050        | 0.0490        | 98               |
| LEAD           | 0.020        | 0.0192        | 96               |
| SELENIUM       | 0.025        | 0.0201        | 80               |
| THALLIUM       | 0.050        | 0.0512        | 103              |

JULY 5, 1995

  
WAYNE L. COOPER, PhD  
LABORATORY DIRECTOR

WOODWARD-CLYDE CONSULTANTS  
2318 MILLPARK DRIVE  
MARYLAND HEIGHTS, MO 63043

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

ATTN: ERIC PAGE

INVOICE # 32656  
PROJECT # C2M11Q1, NL/TARACORP

PREPARATION BLANK  
ICP/AA  
(UNITS - mg/l)

| <u>ELEMENT</u> | <u>RESULT</u> |
|----------------|---------------|
| BERYLLIUM      | <0.005        |
| CADMIUM        | <0.005        |
| CHROMIUM       | <0.010        |
| COPPER         | <0.025        |
| MERCURY        | <0.0002       |
| NICKEL         | <0.040        |
| SILVER         | <0.010        |
| ZINC           | <0.020        |

LABORATORY CONTROL SAMPLE  
ICP/AA  
(UNITS - mg/l)

| <u>ELEMENT</u> | <u>VALUE</u> | <u>RESULT</u> | <u>%RECOVERY</u> |
|----------------|--------------|---------------|------------------|
| BERYLLIUM      | 0.50         | 0.465         | 93               |
| CADMIUM        | 0.50         | 0.472         | 94               |
| CHROMIUM       | 0.50         | 0.482         | 96               |
| COPPER         | 0.50         | 0.472         | 94               |
| MERCURY        | 0.002        | 0.0020        | 100              |
| NICKEL         | 0.50         | 0.475         | 95               |
| SILVER         | 0.50         | 0.477         | 95               |
| ZINC           | 0.50         | 0.467         | 93               |

## CHAIN OF CUSTODY RECORD

SHEET 1 of 2

WOODWARD-CLYDE CONSULTANTS  
 2318 MILLPARK DR.  
 MARYLAND HEIGHTS, MISSOURI 63043  
 314-429-0100

| PROJECT NO:                  | PROJECT NAME: | CONTAINERS                      | CONTAINER DESCRIPTION / ANALYSES REQUESTED |   | REMARKS |
|------------------------------|---------------|---------------------------------|--|---|---------|
|                              |               |                                 | NO. OF                                     |   |         |
| C3m11Q1                      | NL / Taracob? |                                 |  |   |         |
| SAMPLER'S: (Signature)       |               |                                 |  |   |         |
| DATE                         | TIME          | SAMPLE I.D. NUMBER              | X  |   |         |
| 6/15                         | 940           | WMW105-SOGGW                    | 1  | X |         |
|                              | 940           | WMW105-SOGGW                    | 1  | X |         |
| 1025                         | WmW106-SOGGW  | 1                               | X  |   |         |
| 1025                         | WmW106-SOGGW  | 1                               | X  |   |         |
| 1100                         | WmW106-WOGGW  | 1                               | X  |   |         |
| 1100                         | WmW106-WOGGW  | 1                               | X  |   |         |
| 1135                         | WmW107-SOGGW  | 1                               | X  |   |         |
| 1135                         | WmW107-SOGGW  | 1                               | X  |   |         |
| 1140                         | WmW112-10GGWB | 1                               | X  |   |         |
| 1140                         | WmW112-10GGWB | 1                               | X  |   |         |
| RELINQUISHED BY: (Signature) | DATE / TIME   | RECEIVED BY: (Signature)        | DATE / TIME                                |   |         |
| <i>E. S.</i>                 | 6/15 1520     | <i>P. Woods</i>                 | 6/15 1520                                  |   |         |
| RELINQUISHED BY: (Signature) | DATE / TIME   | RECEIVED AT LAB BY: (Signature) | DATE / TIME                                |   |         |
| METHOD OF SHIPMENT:          | AIRBILL NO:   |                                 |  |   |         |

CHAIN OF CUSTODY RECORDSHEET 2 of 2

WOODWARD-CLYDE CONSULTANTS  
 2318 MILLPARK DR.  
 MARYLAND HEIGHTS, MISSOURI 63043  
 314-429-0100

|                              |      |                      |  |                                 |  |                     |         |
|------------------------------|------|----------------------|--|---------------------------------|--|---------------------|---------|
| PROJECT NO:                  |      | PROJECT NAME:        |  | NO. OF CONTAINERS               | CONTAINER DESCRIPTION / ANALYSES REQUESTED |                     | REMARKS |
| <u>C3M11Q1</u>               |      | <u>NL / Forecast</u> |  |                                 | <u>1</u>                                   | <u>P</u>            |         |
| SAMPLER'S: (Signature)       |      |                      |  | <u>1</u>                        | <u>L</u>                                   | <u>Filter</u>       |         |
| DATE                         | TIME | SAMPLE I.D. NUMBER   |  | <u>1</u>                        | <u>L</u>                                   | <u>Filter</u>       |         |
| 6/15/95                      | 1325 | WMW108-1D/0661W      |  | <u>1</u>                        | <u>X</u>                                   | <u>Filter</u>       |         |
|                              | 1325 | WMW108-1D066WF       |  | <u>1</u>                        | <u>X</u>                                   | <u>Filter</u>       |         |
|                              | 1410 | WMW1049Z066W         |  | <u>1</u>                        | <u>X</u>                                   | <u>Filter</u>       |         |
|                              | 1410 | WMW1049Z066WF        |  | <u>1</u>                        | <u>X</u>                                   | <u>Filter</u>       |         |
|                              |      |                      |  |                                 |  |                     |         |
|                              |      |                      |  |                                 |  |                     |         |
|                              |      |                      |  |                                 |  |                     |         |
|                              |      |                      |  |                                 |  |                     |         |
| RELINQUISHED BY: (Signature) |      | DATE / TIME          |  | RECEIVED BY: (Signature)        |  | DATE / TIME         |         |
| <u>E</u>                     |      | <u>6/15 1520</u>     |  | <u>P Woods</u>                  |  | <u>6/15/95 1520</u> |         |
| RELINQUISHED BY: (Signature) |      | DATE / TIME          |  | RECEIVED AT LAB BY: (Signature) |  | DATE / TIME         |         |
| METHOD OF SHIPMENT:          |      |                      |  | AIRBILL NO:                     |  |                     |         |

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 1

COC : 010191

Woodward-Clyde Consultants - W088  
2318 Millpark Drive  
Maryland Heights, Mo. 63043  
Eric Page

Date Received: 06/15/95

Date Logged: 06/15/95

Status: Normal/LEVEL 5

Date Due (PM): 06/27/95 Proj #: C2M11Q1 NL/TARACORP

Date Due (Client): 06/29/95 P.O. #:

Mode: Mail Quot #:

| <u>Sample Id. No.</u>   | <u>Client Sample Name/Number</u> | <u>Matrix</u> | <u>Container</u>  | <u>Preservative</u> | <u>Date</u>      |             |   |
|---|----------------------------------|---------------|-------------------|---------------------|------------------|-------------|---|
|   |                                  |               |                   |                     | <u>Collected</u> | <u>Temp</u> | <u>Tests</u>  |
| 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS<br>9506000291-001-01 | WMW105-SOGGW / SOGGWF            | GROUND WATER  | 2-1 LITER PLASTIC | Nitric Acid         | 06/15/95         |             | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>CADMIUM-SW-846 6010A<br>CHROMIUM-SW-846 6010A<br>SILVER-SW-846 6010A<br>MERCURY-SW-846 7470A<br>NICKEL-SW-846 6010A<br>COPPER-SW-846 6010A<br>TOTAL BERYLLIUM-SW-846 6010A<br>ZINC-SW-846 6010A<br>DISSOLVED ANTIMONY-SW-846 7041<br>DISSOLVED ARSENIC-SW-846 7060<br>DISSOLVED BERYLLIUM-SW-846 6010A<br>Diss. CADMIUM-SW-846 6010A<br>Diss. CHROMIUM-SW-846 6010A<br>Diss. COPPER-SW-846 6010A<br>Diss. LEAD-SW-846 7421<br>Diss. MERCURY-SW-846 7470<br>Diss. NICKEL-SW-846 6010A<br>Diss. SELENIUM-SW-846 7740<br>Diss. SILVER-SW-846 6010A<br>Diss. THALLIUM-SW-846 7841<br>Diss. ZINC-SW-846 6010A |

## Sample Instructions:

|   |                        |              |                   |             |          |   |
|---|------------------------|--------------|-------------------|-------------|----------|---|
| 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS<br>9506000291-002-01 | WMW106-S-0GGW / SOGGWF | GROUND WATER | 2-1 LITER PLASTIC | Nitric Acid | 06/15/95 | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>CADMIUM-SW-846 6010A<br>CHROMIUM-SW-846 6010A<br>SILVER-SW-846 6010A<br>MERCURY-SW-846 7470A<br>NICKEL-SW-846 6010A<br>COPPER-SW-846 6010A<br>TOTAL BERYLLIUM-SW-846 6010A<br>ZINC-SW-846 6010A<br>DISSOLVED ANTIMONY-SW-846 7041<br>DISSOLVED ARSENIC-SW-846 7060<br>DISSOLVED BERYLLIUM-SW-846 6010A<br>Diss. CADMIUM-SW-846 6010A<br>Diss. CHROMIUM-SW-846 6010A<br>Diss. COPPER-SW-846 6010A<br>Diss. LEAD-SW-846 7421<br>Diss. MERCURY-SW-846 7470<br>Diss. NICKEL-SW-846 6010A<br>Diss. SELENIUM-SW-846 7740<br>Diss. SILVER-SW-846 6010A<br>Diss. THALLIUM-SW-846 7841<br>Diss. ZINC-SW-846 6010A |
|---|------------------------|--------------|-------------------|-------------|----------|---|

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 2

COC : 010191  
Woodward-Clyde Consultants - W088  
2318 Millpark Drive  
Maryland Heights, Mo. 63043  
Eric Page

Date Received: 06/15/95  
Date Logged: 06/15/95  
Status: Normal/LEVEL 5

Date Due (PM): 06/27/95 Proj #: C2M11Q1 NL/TARACORP  
Date Due (Client): 06/29/95 P.O. #:  
Mode: Mail Quot #:

| <u>Sample Id. No.</u> | <u>Client Sample Name/Number</u> | <u>Matrix</u> | <u>Container</u> | <u>Preservative</u> | <u>Date</u> | <u>Collected Temp</u> | <u>Tests</u> |
|-----------------------|----------------------------------|---------------|------------------|---------------------|-------------|-----------------------|--------------|
|-----------------------|----------------------------------|---------------|------------------|---------------------|-------------|-----------------------|--------------|

## Sample Instructions:

1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS  
9506000291-003-01 WMW106-D0GGW / DOGGWF GROUND WATER 2-1 LITER PLASTIC Nitric Acid 06/15/95

TOTAL ANTIMONY-SW-846 7041  
TOTAL ARSENIC-SW-846 7060  
LEAD-SW-846 7421  
SELENIUM-SW-846 7740  
THALLIUM-SW-846 7841  
CADMIUM-SW-846 6010A  
CHROMIUM-SW-846 6010A  
SILVER-SW-846 6010A  
MERCURY-SW-846 7470A  
NICKEL-SW-846 6010A  
COPPER-SW-846 6010A  
TOTAL BERYLLIUM-SW-846 6010A  
ZINC-SW-846 6010A  
DISSOLVED ANTIMONY-SW-846 7041  
DISSOLVED ARSENIC-SW-846 7060  
DISSOLVED BERYLLIUM-SW-846 6010A  
Diss. CADMIUM-SW-846 6010A  
Diss. CHROMIUM-SW-846 6010A  
Diss. COPPER-SW-846 6010A  
Diss. LEAD-SW-846 7421  
Diss. MERCURY-SW-846 7470  
Diss. NICKEL-SW-846 6010A  
Diss. SELENIUM-SW-846 7740  
Diss. SILVER-SW-846 6010A  
Diss. THALLIUM-SW-846 7841  
Diss. ZINC-SW-846 6010A

## Sample Instructions:

1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS  
9506000291-004-01 WMW107-S0GGW / SOGGWF GROUND WATER 2-1 LITER PLASTIC Nitric Acid 06/15/95

TOTAL ANTIMONY-SW-846 7041  
TOTAL ARSENIC-SW-846 7060  
LEAD-SW-846 7421  
SELENIUM-SW-846 7740  
THALLIUM-SW-846 7841  
CADMIUM-SW-846 6010A  
CHROMIUM-SW-846 6010A  
SILVER-SW-846 6010A  
MERCURY-SW-846 7470A  
NICKEL-SW-846 6010A  
COPPER-SW-846 6010A  
TOTAL BERYLLIUM-SW-846 6010A  
ZINC-SW-846 6010A  
DISSOLVED ANTIMONY-SW-846 7041  
DISSOLVED ARSENIC-SW-846 7060  
DISSOLVED BERYLLIUM-SW-846 6010A  
Diss. CADMIUM-SW-846 6010A  
Diss. CHROMIUM-SW-846 6010A  
Diss. COPPER-SW-846 6010A  
Diss. LEAD-SW-846 7421  
Diss. MERCURY-SW-846 7470  
Diss. NICKEL-SW-846 6010A  
Diss. SELENIUM-SW-846 7740  
Diss. SILVER-SW-846 6010A  
Diss. THALLIUM-SW-846 7841

**INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST**

Page 3

COC : 010191

Woodward-Clyde Consultants - W088  
2318 Millpark Drive  
Maryland Heights, Mo. 63043  
Eric Page

Date Received: 06/15/95

Date Logged: 06/15/95

Status: Normal/LEVEL 5

Date Due (PM): 06/27/95 Proj #: C2M11Q1 NL/TARACORP

Date Due (Client): 06/29/95 P.O. #:

Mode: Mail Quot #:

| Sample Id. No.    | Client Sample Name/Number | Matrix       | Container         | Preservative | Date      |  |       |
|-------------------|---------------------------|--------------|-------------------|--------------|-----------|--|-------|
|                   |                           |              |                   |              | Collected | Temp   | Tests |
| 9506000291-004-01 | WMW107-S0GGWF / SOGGWF    | GROUND WATER | 2-1 LITER PLASTIC | Nitric Acid  | 06/15/95  | Diss. ZINC-SW-846 6010A  |       |
| 9506000291-005-01 | WMW112-I0GGWB             | GROUND WATER | 1-1 LITER PLASTIC | Nitric Acid  | 06/15/95  | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>CADMIUM-SW-846 6010A<br>CHROMIUM-SW-846 6010A<br>SILVER-SW-846 6010A<br>MERCURY-SW-846 7470A<br>NICKEL-SW-846 6010A<br>COPPER-SW-846 6010A<br>TOTAL BERYLLIUM-SW-846 6010A<br>ZINC-SW-846 6010A |       |

**Sample Instructions:**

1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS  
9506000291-006-01 WMW108-D0GGW / DOGGWF

|              |                   |             |          |   |
|--------------|-------------------|-------------|----------|---|
| GROUND WATER | 2-1 LITER PLASTIC | Nitric Acid | 06/15/95 | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>CADMIUM-SW-846 6010A<br>CHROMIUM-SW-846 6010A<br>SILVER-SW-846 6010A<br>MERCURY-SW-846 7470A<br>NICKEL-SW-846 6010A<br>COPPER-SW-846 6010A<br>TOTAL BERYLLIUM-SW-846 6010A<br>ZINC-SW-846 6010A<br>DISSOLVED ANTIMONY-SW-846 7041<br>DISSOLVED ARSENIC-SW-846 7060<br>DISSOLVED BERYLLIUM-SW-846 6010A<br>Diss. CADMIUM-SW-846 6010A<br>Diss. CHROMIUM-SW-846 6010A<br>Diss. COPPER-SW-846 6010A<br>Diss. LEAD-SW-846 7421<br>Diss. MERCURY-SW-846 7470<br>Diss. NICKEL-SW-846 6010A<br>Diss. SELENIUM-SW-846 7740<br>Diss. SILVER-SW-846 6010A<br>Diss. THALLIUM-SW-846 7841<br>Diss. ZINC-SW-846 6010A |
|--------------|-------------------|-------------|----------|---|

**Sample Instructions:**

1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS  
9506000291-007-01 WMW10492OGGW / OGGWF

|              |                   |             |          |  |
|--------------|-------------------|-------------|----------|--|
| GROUND WATER | 2-1 LITER PLASTIC | Nitric Acid | 06/15/95 | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>CADMIUM-SW-846 6010A<br>CHROMIUM-SW-846 6010A<br>SILVER-SW-846 6010A<br>MERCURY-SW-846 7470A<br>NICKEL-SW-846 6010A |
|--------------|-------------------|-------------|----------|--|

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 4

COC : 010191  
Woodward-Clyde Consultants - W088  
2318 Millpark Drive  
Maryland Heights, Mo. 63043  
Eric Page

Date Received: 06/15/95  
Date Logged: 06/15/95  
Status: Normal/LEVEL 5

Date Due (PM): 06/27/95 Proj #: C2M11Q1 NL/TARACORP  
Date Due (Client): 06/29/95 P.O. #:  
Mode: Mail Quot #:

| <u>Sample Id. No.</u> | <u>Client Sample Name/Number</u> | <u>Matrix</u> | <u>Container</u> | <u>Preservative</u> | <u>Date Collected</u> | <u>Temp</u> | <u>Tests</u>  |
|-----------------------|----------------------------------|---------------|------------------|---------------------|-----------------------|-------------|---|
| 9506000291-007-01     | WMW10492OGGW / OGGWF             | GROUND WATER  | 2-LITER PLASTIC  | Nitric Acid         | 06/15/95              |             | COPPER-SW-846 6010A<br>TOTAL BERYLLIUM-SW-846 6010A<br>ZINC-SW-846 6010A<br>DISSOLVED ANTIMONY-SW-846 7041<br>DISSOLVED ARSENIC-SW-846 7060<br>DISSOLVED BERYLLIUM-SW-846 6010A<br>Diss. CADMIUM-SW-846 6010A<br>Diss. CHROMIUM-SW-846 6010A<br>Diss. COPPER-SW-846 6010A<br>Diss. LEAD-SW-846 7421<br>Diss. MERCURY-SW-846 7470<br>Diss. NICKEL-SW-846 6010A<br>Diss. SELENIUM-SW-846 7740<br>Diss. SILVER-SW-846 6010A<br>Diss. THALLIUM-SW-846 7841<br>Diss. ZINC-SW-846 6010A |

## Sample Instructions:

| <u>Items Transferred</u> | <u>Relinquished By</u> | <u>Date</u>             | <u>Logged In By</u>                 | <u>Date</u>                        | <u>Time</u>       |
|--------------------------|------------------------|-------------------------|-------------------------------------|------------------------------------|-------------------|
| 7                        |                        | 06/15/95 PM Signature : | Anne Morris<br>Client Services Rep. | Phyllis Woods<br>Login Coordinator | 06/15/95 16:16:46 |

coc : 010191  
Woodward-Clyde Consultants - W088  
2318 Millpark Drive  
Maryland Heights, Mo. 63043  
Eric Page

**INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST**

Page 1

Date Received: 06/15/95

Date Logged: 06/15/95

Status: Normal/LEVEL 5

Date Due (PM): 06/27/95 Proj #: C2M11Q1 NL/TARACORP

Date Due (Client): 06/29/95 P.O. #:

Mode: Mail Quot #:

✓ MAM  
7-11-95

## METALS/WET CHEMISTRY DATA ASSESSMENT

PROJECT NO. C3M11Q1  
LABORATORY ENVIRONMETRICS  
LAB PROJECT NO. 32654  
NO. OF SAMPLES/  
MATRIX 2/WATER

SITE NL/TARACORP  
REVIEWER Woodward-Clyde Consultants  
REVIEWER'S NAME WENDY REINHOLDT  
COMPLETION DATE 07/10/95

### DATA ASSESSMENT WORKSHEET

|                       | Meth #<br><u>6010</u><br><u>ICPIAA</u><br><u>✓</u> | Meth #<br><u>METALS</u><br><u>GFIAA</u><br><u>✓</u> | Meth #<br>— | Meth #<br>— | Meth #<br>— |
|-----------------------|--|---|-------------|-------------|-------------|
| 1. HOLDING TIMES      |  |   | —           | —           | —           |
| 2. BLANKS             | <u>✓</u>   | <u>(1)</u>  | —           | —           | —           |
| 3. SCS                | <u>✓</u>   | <u>✓</u>  | —           | —           | —           |
| 4. DCS                | <u>NA</u>  | <u>NA</u>   | —           | —           | —           |
| 5. DILUTION           | <u>✓</u>   | <u>✓</u>  | —           | —           | —           |
| 6. OTHER QC           | <u>NA</u>  | <u>NA</u>   | —           | —           | —           |
| 7. OVERALL ASSESSMENT | <u>O</u>   | <u>O</u>  | —           | —           | —           |

O = Data had no problems/or qualified due to minor problems.

M = Data qualified due to major problems.

Z = Data unacceptable.

X = Problems, but do not affect data.

ACTION ITEMS: \_\_\_\_\_

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COMMENTS(1) Total Arsenic values were above method detection limits  
but below practical quantitation limits. Data qualified as non-detect (u)  
by Lab and WCC. Antimony & Selenium were detected in the method blank.  
Samples were non-detect for Antimony and Selenium. Data not affected.  
No action necessary.

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32654

PO: ---

PROJECT NO: C3M11Q1 NL/TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMM111920GGW  
LAB ID: 9506000367-001  
DATE COLLECTED: 06/20/95  
DATE RECEIVED: 06/20/95 15:28

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u>  | <u>ANALYST</u> |
|-----------------------|---------------------------|-----------------|----------------|
| TOTAL ANTIMONY        | SW-846 7041               | <0.0012 mg/L    | 06/29/95 D.S.  |
| TOTAL ARSENIC         | SW-846 7060               | 0.00120 mg/L BU | 06/30/95 D.S.  |
| TOTAL BERYLLIUM       | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| TOTAL CADMIUM         | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| TOTAL CHROMIUM        | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| TOTAL COPPER          | SW-846 6010A              | <0.025 mg/L     | 06/23/95 R.D.  |
| TOTAL LEAD            | SW-846 7421               | 0.0009 mg/L     | 06/24/95 D.S.  |
| TOTAL MERCURY         | SW-846 7470A              | <0.0002 mg/L    | 06/23/95 J.N.  |
| TOTAL NICKEL          | SW-846 6010A              | <0.040 mg/L     | 06/23/95 R.D.  |
| TOTAL SELENIUM        | SW-846 7740               | <0.0004 mg/L    | 07/03/95 D.S.  |
| TOTAL SILVER          | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| TOTAL THALLIUM        | SW-846 7841               | <0.001 mg/L     | 06/29/95 D.S.  |
| TOTAL ZINC            | SW-846 6010A              | <0.020 mg/L     | 06/23/95 R.D.  |

B = Reported value is greater than the  
Method Detection Limit (MDL) but less than  
the Practical Quantitation Limit (PQL).

July 5, 1995

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32654

PO: ---

PROJECT NO: C3M11Q1 NL/TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMW111920GGWD

LAB ID: 9506000367-002

DATE COLLECTED: 06/20/95

DATE RECEIVED: 06/20/95 15:28

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u>  | <u>ANALYST</u> |
|-----------------------|---------------------------|-----------------|----------------|
| TOTAL ANTIMONY        | SW-846 7041               | <0.0012 mg/L    | 06/29/95 D.S.  |
| TOTAL ARSENIC         | SW-846 7060               | 0.00110 mg/L BU | 06/30/95 D.S.  |
| TOTAL BERYLLIUM       | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| TOTAL CADMIUM         | SW-846 6010A              | <0.005 mg/L     | 06/23/95 R.D.  |
| TOTAL CHROMIUM        | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| TOTAL COPPER          | SW-846 6010A              | <0.025 mg/L     | 06/23/95 R.D.  |
| TOTAL LEAD            | SW-846 7421               | <0.0009 mg/L    | 06/24/95 D.S.  |
| TOTAL MERCURY         | SW-846 7470A              | <0.0002 mg/L    | 06/23/95 J.N.  |
| TOTAL NICKEL          | SW-846 6010A              | <0.040 mg/L     | 06/23/95 R.D.  |
| TOTAL SELENIUM        | SW-846 7740               | <0.0004 mg/L    | 07/03/95 D.S.  |
| TOTAL SILVER          | SW-846 6010A              | <0.010 mg/L     | 06/23/95 R.D.  |
| TOTAL THALLIUM        | SW-846 7841               | <0.0010 mg/L    | 06/29/95 D.S.  |
| TOTAL ZINC            | SW-846 6010A              | 0.0300 mg/L     | 06/23/95 R.D.  |

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995

  
Wayne L. Cooper, Ph.D.  
Laboratory Director

WOODWARD-CLYDE CONSULTANTS  
2318 MILLPARK DRIVE  
MARYLAND HEIGHTS, MO 63043

ATTN: ERIC PAGE

INVOICE # 32654  
PROJECT # C3M11Q1, NL/TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

PREPARATION BLANK  
ICP/AA  
(UNITS - mg/l)

| <u>ELEMENT</u> | <u>RESULT</u> |
|----------------|---------------|
| BERYLLIUM      | <0.005        |
| CADMIUM        | <0.005        |
| CHROMIUM       | <0.010        |
| COPPER         | <0.025        |
| MERCURY        | <0.0002       |
| NICKEL         | <0.040        |
| SILVER         | <0.010        |
| ZINC           | <0.020        |

LABORATORY CONTROL SAMPLE  
ICP/AA  
(UNITS - mg/l)

| <u>ELEMENT</u> | <u>VALUE</u> | <u>RESULT</u> | <u>%RECOVERY</u> |
|----------------|--------------|---------------|------------------|
| BERYLLIUM      | 0.50         | 0.465         | 93               |
| CADMIUM        | 0.50         | 0.472         | 94               |
| CHROMIUM       | 0.50         | 0.482         | 96               |
| COPPER         | 0.50         | 0.472         | 94               |
| MERCURY        | 0.002        | 0.0020        | 100              |
| NICKEL         | 0.50         | 0.475         | 95               |
| SILVER         | 0.50         | 0.477         | 95               |
| ZINC           | 0.50         | 0.467         | 93               |

WOODWARD-CLYDE CONSULTANTS  
2318 MILLPARK DRIVE  
MARYLAND HEIGHTS, MO 63043

ATTN: ERIC PAGE

INVOICE # 32654  
PROJECT # C3M11Q1, NL/TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## PREPARATION BLANK

### GRAPHITE FURNACE ATOMIC ABSORPTION (UNITS - mg/l)

| <u>ELEMENT</u> | <u>RESULT</u> |
|----------------|---------------|
| ANTIMONY       | 0.0057        |
| ARSENIC        | <0.0004       |
| LEAD           | <0.0009       |
| SELENIUM       | 0.0012        |
| THALLIUM       | <0.0010       |

## LABORATORY CONTROL SAMPLE

### GRAPHIC FURNACE ATOMIC ABSORPTION (UNITS - mg/l)

| <u>ELEMENT</u> | <u>VALUE</u> | <u>RESULT</u> | <u>%RECOVERY</u> |
|----------------|--------------|---------------|------------------|
| ANTIMONY       | 0.100        | 0.1025        | 102.5            |
| ARSENIC        | 0.050        | 0.0490        | 98               |
| LEAD           | 0.020        | 0.0192        | 96               |
| SELENIUM       | 0.025        | 0.0201        | 80               |
| THALLIUM       | 0.050        | 0.0512        | 103              |

JULY 5, 1995

  
WAYNE L. COOPER, PLS  
LABORATORY DIRECTOR

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 1

cc : 010227  
 Woodward-Clyde Consultants - W088  
 2318 Millpark Drive  
 Maryland Heights, Mo. 63043  
 Eric Page

Date Received: 06/20/95  
 Date Logged: 06/20/95  
 Status: Normal/LEVEL 5

Date Due (PM): 06/30/95 Proj #: C3M11Q1 NL/TARACORP  
 Date Due (Client): 07/05/95 P.O. #:  
 Mode: Mail Quot #:

| <u>Sample Id. No.</u> | <u>Client Sample Name/Number</u> | <u>Matrix</u> | <u>Container</u>  | <u>Preservative</u> | <u>Date Collected</u> | <u>Temp</u> | <u>Tests</u>   |
|-----------------------|----------------------------------|---------------|-------------------|---------------------|-----------------------|-------------|--|
| 1506000367-001-01     | WMW111920GGW                     | GROUND WATER  | 1-1 LITER PLASTIC | Nitric Acid         | 06/20/95              |             | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>CADMIUM-SW-846 6010A<br>CHROMIUM-SW-846 6010A<br>SILVER-SW-846 6010A<br>MERCURY-SW-846 7470A<br>NICKEL-SW-846 6010A<br>COPPER-SW-846 6010A<br>TOTAL BERYLLIUM-SW-846 6010A<br>ZINC-SW-846 6010A |
| 1506000367-002-01     | WMW111920GGWD                    | GROUND WATER  | 1-1 LITER PLASTIC | Nitric Acid         | 06/20/95              |             | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>CADMIUM-SW-846 6010A<br>CHROMIUM-SW-846 6010A<br>SILVER-SW-846 6010A<br>MERCURY-SW-846 7470A<br>NICKEL-SW-846 6010A<br>COPPER-SW-846 6010A<br>TOTAL BERYLLIUM-SW-846 6010A<br>ZINC-SW-846 6010A |

Sample Instructions:

| <u>Items Transferred</u> | <u>Relinquished By</u> | <u>Date</u>             | <u>Logged In By</u>                                       | <u>Date</u>                        | <u>Time</u>       |
|--------------------------|------------------------|-------------------------|---|------------------------------------|-------------------|
| 2                        |                        | 06/20/95 PM Signature : | Anne Morris<br>Client Services Rep.<br><i>Anne Morris</i> | Phyllis Woods<br>Login Coordinator | 06/20/95 15:28:35 |

COC : 010227

**Woodward-Clyde Consultants - W088**  
**2318 Millpark Drive**  
**Maryland Heights, Mo. 63043**  
**Eric Page**

**INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST**

Page 1

Date Received: 06/20/9

Date Logged: 06/20/95

status: Normal/LEVEL 5

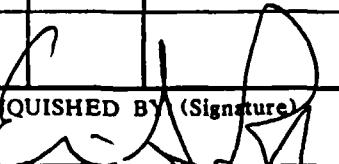
Date Due (PM): 06/30/95 Proj #: C3M11Q1 NUTARACORP

Date Due (Client): 07/05/95 P.O. #:

Mode: Mail Quot #:

CHAIN OF CUSTODY RECORDSHEET 1 of 1

WOODWARD-CLYDE CONSULTANTS  
2318 MILLPARK DR.  
MARYLAND HEIGHTS, MISSOURI 63043  
314-429-0100

| PROJECT NO:   |  | PROJECT NAME: |      | NO. OF CONTAINERS | CONTAINER DESCRIPTION / ANALYSES REQUESTED  |         |        |      |             | REMARKS |
|---|--|---------------|------|-------------------|---|---------|--------|------|-------------|---------|
| 13M1101   |  | NL / Tapacorp |      |                   |   | 1L Poly | metals | HMBs | reserved    |         |
| SAMPLE I.D. NUMBER  |  | DATE          | TIME |                   |   |         |        |      |             |         |
| WMW111920G(LW)  |  | 6/20          | 950  | 1                 | X   |         |        |      |             |         |
| WMW111920GG(WJ)   |  | "             | 950  | 1                 | X   |         |        |      |             |         |
|   |  |               |      |                   |   |         |        |      |             |         |
|   |  |               |      |                   |   |         |        |      |             |         |
|   |  |               |      |                   |   |         |        |      |             |         |
|   |  |               |      |                   |   |         |        |      |             |         |
|   |  |               |      |                   |   |         |        |      |             |         |
|   |  |               |      |                   |   |         |        |      |             |         |
| RELINQUISHED BY: (Signature)  |  |               |      | DATE / TIME       | RECEIVED BY: (Signature)  |         |        |      | DATE / TIME |         |
|  |  |               |      | 6/20/95 1145      |  |         |        |      | 6/20 1145   |         |
| RELINQUISHED BY: (Signature)  |  |               |      | DATE / TIME       | RECEIVED AT LAB BY: (Signature)   |         |        |      | DATE / TIME |         |
|   |  |               |      |                   |   |         |        |      |             |         |
| METHOD OF SHIPMENT:   |  |               |      |                   | AIRBILL NO:   |         |        |      |             |         |

V MAM  
7-11-95

# METALS/WET CHEMISTRY DATA ASSESSMENT

PROJECT NO. C3M11Q1  
LABORATORY ENVIRONMETRICS  
LAB PROJECT NO. 32560  
NO. OF SAMPLES/  
MATRIX 31 WATER

SITE NL/TARACORP  
REVIEWER Woodward-Clyde Consultants  
REVIEWER'S NAME Wendy Rednbolt  
COMPLETION DATE 07/10/95

## DATA ASSESSMENT WORKSHEET

|                       | <u>GO/NO GO</u><br><u>Meth #</u><br><u>ICP/AA</u> | <u>METALS</u><br><u>Meth #</u><br><u>GF/AA</u> | <u>Meth #</u> | <u>Meth #</u> | <u>Meth #</u> |
|-----------------------|---|--|---------------|---------------|---------------|
| 1. HOLDING TIMES      | ✓   | ✓  | —             | —             | —             |
| 2. BLANKS             | ✓   | (1)  | —             | —             | —             |
| 3. SCS                | ✓   | ✓  | —             | —             | —             |
| 4. DCS                | NA  | NA   | —             | —             | —             |
| 5. DILUTION           | ✓   | ✓  | —             | —             | —             |
| 6. OTHER QC           | NA  | NA   | —             | —             | —             |
| 7. OVERALL ASSESSMENT | O   | O  | —             | —             | —             |

O = Data had no problems/or qualified due to minor problems.

M = Data qualified due to major problems.

Z = Data unacceptable.

X = Problems, but do not affect data.

ACTION ITEMS: (1) ANTIMONY AND LEAD ARE DETECTED IN THE METHOD BLANK ANALYTICAL RESULTS WERE QUALIFIED AS NON-DETECT (U) IF RESULT WAS GREATER THAN THE DETECTION LIMIT BUT LESS THAN 5X THE BLANK RESULT. THE LAB ALSO QUALIFIED SOME SAMPLE RESULTS THAT WERE GREATER THAN THE METHOD DETECTION LIMIT BUT LESS THAN THE PRACTICAL QUANTIFICATION LIMIT. THE LAB QUALIFIED RESULTS WITH A "B".

COMMENTS:

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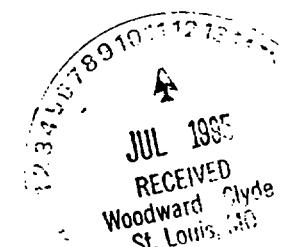
Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32560  
PO: ---  
PROJECT NO: C3M11Q1 NL/ TERRACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550



## ANALYSIS RESULTS

SAMPLE ID: WMM10Z-1 FIELD FILTERED  
LAB ID: 9506000267-001  
DATE COLLECTED: 06/14/95  
DATE RECEIVED: 06/14/95 16:05

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u>  | <u>ANALYST</u> |
|-----------------------|---------------------------|-----------------|----------------|
| DISSOLVED ANTIMONY    | SW-846 7041               | <0.0012 mg/L    | 6/18/95 D.S.   |
| DISSOLVED ARSENIC     | SW-846 7060               | 0.00120 mg/L BU | 6/17/95 D.S.   |
| DISSOLVED BERYLLIUM   | SW-846 6010A              | <0.005 mg/L     | 6/20/95 R.D.   |
| DISSOLVED CADMIUM     | SW-846 6010A              | <0.005 mg/L     | 6/20/95 R.D.   |
| DISSOLVED CHROMIUM    | SW-846 6010A              | <0.010 mg/L     | 6/20/95 R.D.   |
| DISSOLVED COPPER      | SW-846 6010A              | <0.025 mg/L     | 6/20/95 R.D.   |
| DISSOLVED LEAD        | SW-846 7421               | <0.0009 mg/L    | 6/17/95 D.S.   |
| DISSOLVED MERCURY     | SW-846 7470               | <0.0002 mg/L    | 6/23/95 D.S.   |
| DISSOLVED NICKEL      | SW-846 6010A              | <0.040 mg/L     | 6/20/95 R.D.   |
| DISSOLVED SELENIUM    | SW-846 7740               | 0.00680 mg/L    | 6/17/95 D.S.   |
| DISSOLVED SILVER      | SW-846 6010A              | <0.010 mg/L     | 6/20/95 R.D.   |
| DISSOLVED THALLIUM    | SW-846 7841               | <0.0010 mg/L    | 6/18/95 D.S.   |
| DISSOLVED ZINC        | SW-846 6010A              | <0.020 mg/L     |                |
| TOTAL ANTIMONY        | SW-846 7041               | <0.0012 mg/L    | 6/18/95 D.S.   |
| TOTAL ARSENIC         | SW-846 7060               | 0.00340 mg/L BU | 6/17/95 D.S.   |
| TOTAL BERYLLIUM       | SW-846 6010A              | <0.005 mg/L     | 6/20/95 R.D.   |
| TOTAL CADMIUM         | SW-846 6010A              | <0.005 mg/L     | 6/20/95 R.D.   |
| TOTAL CHROMIUM        | SW-846 6010A              | <0.010 mg/L     | 6/20/95 R.D.   |
| TOTAL COPPER          | SW-846 6010A              | <0.025 mg/L     | 6/20/95 R.D.   |
| TOTAL LEAD            | SW-846 7421               | 0.0131 mg/L     | 6/18/95 D.S.   |
| TOTAL MERCURY         | SW-846 7470A              | <0.0002 mg/L    | 6/23/95 D.S.   |
| TOTAL NICKEL          | SW-846 6010A              | <0.040 mg/L     | 6/20/95 R.D.   |
| TOTAL SELENIUM        | SW-846 7740               | 0.00630 mg/L    | 6/17/95 D.S.   |
| TOTAL SILVER          | SW-846 6010A              | <0.010 mg/L     | 6/20/95 R.D.   |
| TOTAL THALLIUM        | SW-846 7841               | <0.0010 mg/L    | 6/18/95 D.S.   |

- B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

June 26, 1995

  
Wayne L. Cooper, P.E.  
Laboratory Director

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32560  
PO: ---  
PROJECT NO: C3M11Q1 NL/ TERRACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

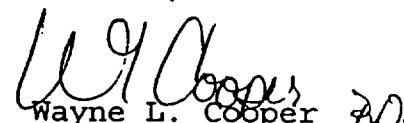
## ANALYSIS RESULTS

SAMPLE ID: WMW10Z-1  
LAB ID: 9506000267-001  
DATE COLLECTED: 06/14/95  
DATE RECEIVED: 06/14/95 16:02

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u> | <u>ANALYST</u> |
|-----------------------|---------------------------|----------------|----------------|
| TOTAL ZINC            | SW-846 6010A              | 0.0320 mg/L    | 6/20/95 R.D.   |

B = Reported value is greater than the  
Method Detection Limit (MDL) but less than  
the Practical Quantitation Limit (PQL).

June 26, 1995

  
Wayne L. Cooper, P.D.  
Laboratory Director

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32560  
PO: ---  
PROJECT NO: C3M11Q1 NL/ TERRACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMM101-1 FIELD FILTERED  
LAB ID: 9506000267-002  
DATE COLLECTED: 06/14/95  
DATE RECEIVED: 06/14/95 16:06

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u> | <u>ANALYST</u> |
|-----------------------|---------------------------|----------------|----------------|
| DISSOLVED ANTIMONY    | SW-846 7041               | <0.0012 mg/L   | 6/18/95 D.S.   |
| DISSOLVED ARSENIC     | SW-846 7060               | 0.00460 mg/L B | 6/18/95 D.S.   |
| DISSOLVED BERYLLIUM   | SW-846 6010A              | <0.005 mg/L    | 6/20/95 R.D.   |
| DISSOLVED CADMIUM     | SW-846 6010A              | <0.005 mg/L    | 6/20/95 R.D.   |
| DISSOLVED CHROMIUM    | SW-846 6010A              | <0.010 mg/L    | 6/20/95 R.D.   |
| DISSOLVED COPPER      | SW-846 6010A              | <0.025 mg/L    | 6/20/95 R.D.   |
| DISSOLVED LEAD        | SW-846 7421               | <0.0009 mg/L   | 6/17/95 D.S.   |
| DISSOLVED MERCURY     | SW-846 7470               | <0.0002 mg/L   | 6/23/95 D.S.   |
| DISSOLVED NICKEL      | SW-846 6010A              | <0.040 mg/L    | 6/20/95 R.D.   |
| DISSOLVED SELENIUM    | SW-846 7740               | 0.00520 mg/L   | 6/17/95 D.S.   |
| DISSOLVED SILVER      | SW-846 6010A              | <0.010 mg/L    | 6/20/95 R.D.   |
| DISSOLVED THALLIUM    | SW-846 7841               | <0.0010 mg/L   | 6/18/95 D.S.   |
| DISSOLVED ZINC        | SW-846 6010A              | <0.020 mg/L    | 6/20/95 R.D.   |
| TOTAL ANTIMONY        | SW-846 7041               | <0.0014 mg/L   | 6/18/95 D.S.   |
| TOTAL ARSENIC         | SW-846 7060               | 0.0268 mg/L    | 6/18/95 D.S.   |
| TOTAL BERYLLIUM       | SW-846 6010A              | <0.005 mg/L    | 6/20/95 R.D.   |
| TOTAL CADMIUM         | SW-846 6010A              | <0.005 mg/L    | 6/20/95 R.D.   |
| TOTAL CHROMIUM        | SW-846 6010A              | <0.010 mg/L    | 6/20/95 R.D.   |
| TOTAL COPPER          | SW-846 6010A              | <0.025 mg/L    | 6/20/95 R.D.   |
| TOTAL LEAD            | SW-846 7421               | 0.00300 mg/L U | 6/17/95 D.S.   |
| TOTAL MERCURY         | SW-846 7470A              | <0.0002 mg/L   | 6/23/95 D.S.   |
| TOTAL NICKEL          | SW-846 6010A              | <0.040 mg/L    | 6/20/95 R.D.   |
| TOTAL SELENIUM        | SW-846 7740               | 0.00490 mg/L   | 6/17/95 D.S.   |
| TOTAL SILVER          | SW-846 6010A              | <0.010 mg/L    | 6/20/95 R.D.   |
| TOTAL THALLIUM        | SW-846 7841               | <0.0010 mg/L   | 6/18/95 D.S.   |

B = 'Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

June 26, 1995

*W.L. Cooper*  
Wayne L. Cooper, P.C.  
Laboratory Director

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32560

PO: ---

PROJECT NO: C3M11Q1 NL/ TERRACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMW101-1

LAB ID: 9506000267-002

DATE COLLECTED: 06/14/95

DATE RECEIVED: 06/14/95 16:09

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u> | <u>ANALYST</u> |
|-----------------------|---------------------------|----------------|----------------|
| TOTAL ZINC            | SW-846 6010A              | 0.0240 mg/L    | 6/20/95 R.D.   |

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

June 26, 1995

  
Wayne L. Cooper, P.D.  
Laboratory Director

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32560  
PO: ---  
PROJECT NO: C3M11Q1 NL/ TERRACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMM104-1 FIELD FILTERED  
LAB ID: 9506000267-003  
DATE COLLECTED: 06/14/95  
DATE RECEIVED: 06/14/95 16:12

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u>  | <u>ANALYST</u> |
|-----------------------|---------------------------|-----------------|----------------|
| DISSOLVED ANTIMONY    | SW-846 7041               | <0.0012 mg/L    | 6/18/95 D.S.   |
| DISSOLVED ARSENIC     | SW-846 7060               | 0.00310 mg/L BU | 6/17/95 D.S.   |
| DISSOLVED BERYLLIUM   | SW-846 6010A              | <0.005 mg/L     | 6/20/95 R.D.   |
| DISSOLVED CADMIUM     | SW-846 6010A              | <0.005 mg/L     | 6/20/95 R.D.   |
| DISSOLVED CHROMIUM    | SW-846 6010A              | <0.010 mg/L     | 6/20/95 R.D.   |
| DISSOLVED COPPER      | SW-846 6010A              | <0.025 mg/L     | 6/20/95 R.D.   |
| DISSOLVED LEAD        | SW-846 7421               | <0.0009 mg/L    | 6/17/95 D.S.   |
| DISSOLVED MERCURY     | SW-846 7470               | <0.0002 mg/L    | 6/23/95 D.S.   |
| DISSOLVED NICKEL      | SW-846 6010A              | <0.040 mg/L     | 6/20/95 R.D.   |
| DISSOLVED SELENIUM    | SW-846 7740               | 0.00620 mg/L    | 6/17/95 D.S.   |
| DISSOLVED SILVER      | SW-846 6010A              | <0.010 mg/L     | 6/20/95 R.D.   |
| DISSOLVED THALLIUM    | SW-846 7841               | <0.0010 mg/L    | 6/18/95 D.S.   |
| DISSOLVED ZINC        | SW-846 6010A              | <0.020 mg/L     | 6/20/95 R.D.   |
| TOTAL ANTIMONY        | SW-846 7041               | 0.00340 mg/L BU | 6/18/95 D.S.   |
| TOTAL ARSENIC         | SW-846 7060               | 0.0125 mg/L     | 6/17/95 D.S.   |
| TOTAL BERYLLIUM       | SW-846 6010A              | <0.005 mg/L     | 6/20/95 R.D.   |
| TOTAL CADMIUM         | SW-846 6010A              | <0.005 mg/L     | 6/20/95 R.D.   |
| TOTAL CHROMIUM        | SW-846 6010A              | 0.0110 mg/L     | 6/20/95 R.D.   |
| TOTAL COPPER          | SW-846 6010A              | <0.025 mg/L     | 6/20/95 R.D.   |
| TOTAL LEAD            | SW-846 7421               | 0.110 mg/L      | 6/18/95 D.S.   |
| TOTAL MERCURY         | SW-846 7470A              | 0.0002 mg/L     | 6/23/95 D.S.   |
| TOTAL NICKEL          | SW-846 6010A              | <0.040 mg/L     | 6/20/95 R.D.   |
| TOTAL SELENIUM        | SW-846 7740               | 0.00540 mg/L    | 6/17/95 D.S.   |
| TOTAL SILVER          | SW-846 6010A              | <0.010 mg/L     | 6/20/95 R.D.   |
| TOTAL THALLIUM        | SW-846 7841               | <0.0010 mg/L    | 6/18/95 D.S.   |

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

June 26, 1995

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32560  
PO: ---  
PROJECT NO: C3M11Q1 NL/ TERRACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WMM104-1  
LAB ID: 9506000267-003  
DATE COLLECTED: 06/14/95  
DATE RECEIVED: 06/14/95 16:10

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u> | <u>ANALYST</u> |
|-----------------------|---------------------------|----------------|----------------|
| TOTAL ZINC            | SW-846 6010A              | 0.0390 mg/L    | 6/20/95 R.D.   |

B = Reported value is greater than the  
Method Detection Limit (MDL) but less than  
the Practical Quantitation Limit (PQL).

June 26, 1995

WOODWARD-CLYDE CONSULTANTS  
2318 MILLPARK DRIVE  
MARYLAND HEIGHTS, MO 63043

ATTN: ERIC PAGE

INVOICE # 32560  
PROJECT # C3M11Q1, NL/TARRACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## PREPARATION BLANK

### GRAPHITE FURNACE ATOMIC ABSORPTION (UNITS-mg/l)

| <u>ELEMENT</u> | <u>BLANK RESULT</u> |
|----------------|---------------------|
| ANTIMONY       | 0.0039              |
| ARSENIC        | <0.0004             |
| LEAD           | 0.0013              |
| SELENIUM       | <0.0004             |
| THALLIUM       | <0.0007             |

## LABORATORY CONTROL SAMPLE

### GRAPHIC FURNACE ATOMIC ABSORPTION (UNITS-mg/l)

| <u>ELEMENT</u> | <u>VALUE</u> | <u>RESULT</u> | <u>%RECOVERY</u> |
|----------------|--------------|---------------|------------------|
| ANTIMONY       | 0.100        | 0.1007        | 101              |
| ARSENIC        | 0.050        | 0.0468        | 94               |
| LEAD           | 0.020        | 0.0209        | 105              |
| SELENIUM       | 0.025        | 0.0229        | 92               |
| THALLIUM       | 0.050        | 0.0493        | 99               |

JUNE 22, 1995

  
WAYNE L. COOPER, PhD  
LABORATORY DIRECTOR

WOODWARD-CLYDE CONSULTANTS  
2318 MILLPARK DRIVE  
MARYLAND HEIGHTS, MO 63043

ATTN: ERIC PAGE

INVOICE # 32560  
PROJECT # C3M11Q1, NL/TARRACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## PREPARATION BLANK

ICP/AA  
(UNITS-mg/l)

| <u>ELEMENT</u> | <u>BLANK RESULT</u> |
|----------------|---------------------|
| BERYLLIUM      | <0.005              |
| CADMIUM        | <0.200              |
| CHROMIUM       | <0.010              |
| COPPER         | <0.025              |
| MERCURY        | <0.0002             |
| NICKEL         | <0.040              |
| SILVER         | <0.010              |
| ZINC           | <0.020              |

## LABORATORY CONTROL SAMPLE

ICP/AA  
(UNITS-mg/l)

| <u>ELEMENT</u> | <u>VALUE</u> | <u>RESULT</u> | <u>%RECOVERY</u> |
|----------------|--------------|---------------|------------------|
| BERYLLIUM      | 0.50         | 0.453         | 91               |
| CADMIUM        | 0.50         | 0.483         | 97               |
| CHROMIUM       | 0.50         | 0.475         | 95               |
| COPPER         | 0.50         | 0.467         | 93               |
| MERCURY        | 0.002        | 0.00212       | 106              |
| NICKEL         | 0.50         | 0.491         | 98               |
| SILVER         | 0.50         | 0.485         | 97               |
| ZINC           | 0.50         | 0.475         | 95               |

JUNE 22, 1995

  
WAYNE L. COOPER P.D.  
LABORATORY DIRECTOR

CHAIN OF CUSTODY RECORDSHEET 1 of 1

WOODWARD-CLYDE CONSULTANTS  
2318 MILLPARK DR.  
MARYLAND HEIGHTS, MISSOURI 63043  
314-429-0100

| PROJECT NO:                  |      | PROJECT NAME:      |  | NO. OF CONTAINERS               | CONTAINER DESCRIPTION / ANALYSES REQUESTED   |   |  |             | REMARKS |
|------------------------------|------|--------------------|--|---------------------------------|--|---|--|-------------|---------|
| C3M10Q1                      |      | NL / Taracord      |  |                                 | 1-11 Poly<br>1-12 Poly<br>1-13 Poly<br>1-14 Poly<br>1-15 Poly<br>1-16 Poly<br>1-17 Poly<br>1-18 Poly<br>1-19 Poly<br>1-20 Poly |   |  |             |         |
| SAMPLER'S: (Signature)       |      |                    |  |                                 | 1-15 Filled<br>1-16 Filled<br>1-17 Filled<br>1-18 Filled<br>1-19 Filled<br>1-20 Filled   |   |  |             |         |
| DATE                         | TIME | SAMPLE I.D. NUMBER |  |                                 |  |   |  |             |         |
| 6/14                         | 950  | WMW10Z-1           |  | 2                               | X  | X |  |             |         |
| ↓                            | 1040 | WMW101-1           |  | 2                               | X  | X |  |             |         |
| ↓                            | 1110 | WMW10A-1           |  | 2                               | X  | R |  |             |         |
|                              |      |                    |  |                                 |  |   |  |             |         |
|                              |      |                    |  |                                 |  |   |  |             |         |
|                              |      |                    |  |                                 |  |   |  |             |         |
|                              |      |                    |  |                                 |  |   |  |             |         |
|                              |      |                    |  |                                 |  |   |  |             |         |
|                              |      |                    |  |                                 |  |   |  |             |         |
| RELINQUISHED BY: (Signature) |      | DATE / TIME        |  | RECEIVED BY: (Signature)        |  |   |  | DATE / TIME |         |
| E                            |      | 6/14 1535          |  | J                               |  |   |  | 6/14/95 335 |         |
| RELINQUISHED BY: (Signature) |      | DATE / TIME        |  | RECEIVED AT LAB BY: (Signature) |  |   |  | DATE / TIME |         |
| METHOD OF SHIPMENT:          |      |                    |  | AIRBILL NO:                     |  |   |  |             |         |

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 1

coc : 010176

Woodward-Clyde Consultants - W088  
 2318 Millpark Drive  
 Maryland Heights, Mo. 63043  
 Eric Page

Date Received: 06/14/95

Date Logged: 06/14/95

Status: Normal/LEVEL 5

Date Due (PM): 06/26/95 Proj #: C3M11Q1 NL/ TERRACORP

Date Due (Client): 06/28/95 P.O. #:

Mode: Mail quot #:

| <u>Sample Id. No.</u>               | <u>Client Sample Name/Number</u> | <u>Matrix</u> | <u>Container</u>  | <u>Preservative</u> | <u>Date Collected</u> | <u>Temp</u> | <u>Tests</u>  |
|-------------------------------------|----------------------------------|---------------|-------------------|---------------------|-----------------------|-------------|---|
| 9506000267-001-01                   | WMW10Z-1                         | GROUND WATER  | 1-1 LITER PLASTIC | Nitric Acid         | 06/14/95              |             | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>CADMIUM-SW-846 6010A<br>CHROMIUM-SW-846 6010A<br>SILVER-SW-846 6010A<br>MERCURY-SW-846 7470A<br>NICKEL-SW-846 6010A<br>COPPER-SW-846 6010A<br>TOTAL BERYLLIUM-SW-846 6010A<br>ZINC-SW-846 6010A  |
| FIELD FILTERED<br>9506000267-001-02 | WMW10Z-1                         | GROUND WATER  | 1-1 LITER PLASTIC | Nitric Acid         | 06/14/95              |             | DISSOLVED ANTIMONY-SW-846 7041<br>DISSOLVED ARSENIC-SW-846 7060<br>DISSOLVED BERYLLIUM-SW-846 6010A<br>Diss. CADMIUM-SW-846 6010A<br>Diss. CHROMIUM-SW-846 6010A<br>Diss. COPPER-SW-846 6010A<br>Diss. LEAD-SW-846 7421<br>Diss. MERCURY-SW-846 7470<br>Diss. NICKEL-SW-846 6010A<br>Diss. SELENIUM-SW-846 7740<br>Diss. SILVER-SW-846 6010A<br>Diss. THALLIUM-SW-846 7841<br>Diss. ZINC-SW-846 6010A |
| FIELD FILTERED<br>9506000267-002-01 | WMW10I-1                         | GROUND WATER  | 1-1 LITER PLASTIC | Nitric Acid         | 06/14/95              |             | DISSOLVED ANTIMONY-SW-846 7041<br>DISSOLVED ARSENIC-SW-846 7060<br>DISSOLVED BERYLLIUM-SW-846 6010A<br>Diss. CADMIUM-SW-846 6010A<br>Diss. CHROMIUM-SW-846 6010A<br>Diss. COPPER-SW-846 6010A<br>Diss. LEAD-SW-846 7421<br>Diss. MERCURY-SW-846 7470<br>Diss. NICKEL-SW-846 6010A<br>Diss. SELENIUM-SW-846 7740<br>Diss. SILVER-SW-846 6010A<br>Diss. THALLIUM-SW-846 7841<br>Diss. ZINC-SW-846 6010A |
| 9506000267-002-02                   | WMW10I-1                         | GROUND WATER  | 1-1 LITER PLASTIC | Nitric Acid         | 06/14/95              |             | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>CADMIUM-SW-846 6010A<br>CHROMIUM-SW-846 6010A<br>SILVER-SW-846 6010A<br>MERCURY-SW-846 7470A<br>NICKEL-SW-846 6010A<br>COPPER-SW-846 6010A   |

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 2

coc : 010176

Woodward-Clyde Consultants - W088  
 2318 Millpark Drive  
 Maryland Heights, Mo. 63043  
 Eric Page

Date Received: 06/14/95

Date Logged: 06/14/95

Status: Normal/LEVEL 5

Date Due (PM): 06/26/95 Proj #: C3M11Q1 NL/TERRACORP

Date Due (Client): 06/28/95 P.O. #:

Mode: Mail Quot #:

| <u>Sample Id. No.</u>               | <u>Client Sample Name/Number</u> | <u>Matrix</u>                        | <u>Container</u>  | <u>Preservative</u> | <u>Date Collected</u> | <u>Temp</u> | <u>Tests</u>  |
|-------------------------------------|----------------------------------|--------------------------------------|-------------------|---------------------|-----------------------|-------------|---|
| 9506000267-002-02                   | WMW101-1                         | GROUND WATER                         | 1-1 LITER PLASTIC | Nitric Acid         | 06/14/95              |             | TOTAL BERYLLIUM-SW-846 6010A<br>ZINC-SW-846 6010A   |
| 9506000267-003-01                   | WMW104-1                         | Sample Instructions:<br>GROUND WATER | 1-1 LITER PLASTIC | Nitric Acid         | 06/14/95              |             | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>CADMIUM-SW-846 6010A<br>CHROMIUM-SW-846 6010A<br>SILVER-SW-846 6010A<br>MERCURY-SW-846 7470A<br>NICKEL-SW-846 6010A<br>COPPER-SW-846 6010A<br>TOTAL BERYLLIUM-SW-846 6010A<br>ZINC-SW-846 6010A  |
| FIELD FILTERED<br>9506000267-003-02 | WMW104-1                         | Sample Instructions:<br>GROUND WATER | 1-1 LITER PLASTIC | Nitric Acid         | 06/14/95              |             | DISSOLVED ANTIMONY-SW-846 7041<br>DISSOLVED ARSENIC-SW-846 7060<br>DISSOLVED BERYLLIUM-SW-846 6010A<br>Diss. CADMIUM-SW-846 6010A<br>Diss. CHROMIUM-SW-846 6010A<br>Diss. COPPER-SW-846 6010A<br>Diss. LEAD-SW-846 7421<br>Diss. MERCURY-SW-846 7470<br>Diss. NICKEL-SW-846 6010A<br>Diss. SELENIUM-SW-846 7740<br>Diss. SILVER-SW-846 6010A<br>Diss. THALLIUM-SW-846 7841<br>Diss. ZINC-SW-846 6010A |

Sample Instructions:

|                               |                        |                         |  |   |                         |                         |
|-------------------------------|------------------------|-------------------------|--|---|-------------------------|-------------------------|
| <u>Items Transferred</u><br>6 | <u>Relinquished By</u> | <u>Date</u><br>06/14/95 | <u>PM Signature :</u><br>Anne Morris<br>Client Services Rep. | <u>Logged In By</u><br>Phyllis Woods<br>Login Coordinator | <u>Date</u><br>06/14/95 | <u>Time</u><br>16:12:25 |
|-------------------------------|------------------------|-------------------------|--|---|-------------------------|-------------------------|



coc : 010176  
Woodward-Clyde Consultants - W088  
2318 Millpark Drive  
Maryland Heights, Mo. 63043  
Eric Page

**INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST**

Page 1

Date Received: 06/14/95

Date Logged: 06/14/95

Status: Normal/LEVEL 5

Date Due (PM): 06/26/95 Proj #: C3M11Q1 NL/TERRACORP  
Date Due (Client): 06/28/95 P.O. #:  
Mode: Mail Print #:

MAM ✓  
10-27-95

## METALS/WET CHEMISTRY DATA ASSESSMENT

PROJECT NO. C3m11Q1  
LABORATORY ENVIRONMETRICS  
LAB PROJECT NO. 34119  
NO. OF SAMPLES/  
MATRIX 21 WATER

SITE NL/TARA CORP

REVIEWER Woodward-Clyde Consultants  
REVIEWER'S NAME WENDY REDWOLD  
COMPLETION DATE 10/24/95

### DATA ASSESSMENT WORKSHEET

|                       | <u>ICP/AA</u><br>Meth #<br><u>6010A</u> | <u>GFAA</u><br>Meth #<br><u>7041, 7060</u><br><u>7421, 7740</u><br><u>✓ 7841</u> | Meth # | Meth # | Meth # |
|-----------------------|---|--|--------|--------|--------|
| 1. HOLDING TIMES      | <u>✓</u>                                |  |        |        |        |
| 2. BLANKS             | <u>(1)</u>                              | <u>(2)</u>   |        |        |        |
| 3. SCS                | <u>✓</u>                                | <u>✓</u>   |        |        |        |
| 4. DCS                | <u>NA</u>                               | <u>NA</u>  |        |        |        |
| 5. DILUTION           | <u>✓</u>                                | <u>✓</u>   |        |        |        |
| 6. OTHER QC           | <u>NA</u>                               | <u>NA</u>  |        |        |        |
| 7. OVERALL ASSESSMENT | <u>O</u>                                | <u>O</u>   |        |        |        |

O = Data had no problems/or qualified due to minor problems.

M = Data qualified due to major problems.

Z = Data unacceptable.

X = Problems, but do not affect data.

ACTION ITEMS: (1) BERYLLIUM DETECTED IN PREP BLANK BELOW DETECTION LIMIT. RESULT WAS BROUGHT UP TO THE DETECTION LIMIT AND QUALIFIED AS NON-DETECT (U). (2) ANTIMONY AND SELENIUM DETECTED IN PREP BLANK. BLANK RESULT WAS MULTIPLIED BY DILUTION FACTOR AND 5X. ALL RESULTS DETECTED BELOW THE MULTIPLIED BLANK RESULT WERE QUALIFIED AS NON-DETECT (U).

COMMENTS:

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# **ENVIRONMETRICS**

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

October 9, 1995

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

Attn: Melissa Moore

Enclosed you will find analytical reports for the samples described below:

Date Received: 09/26/95  
Chain of Custody Number: 010370  
Environmetrics Laboratory Number: 9509/425

I have reviewed the data generated by the laboratory and have found the data to conform to the applicable methods and QC criteria. If you have any questions, please feel free to call me at (314) 427-0550.

Sincerely,



Anne Arnold  
Project Manager

Enclosure: Invoice Number 34119

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Melissa Moore

INVOICE: 34119

PO: --

PROJECT NO: GRANITE CITY NL/TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WW1443-2

LAB ID: 9509000425-002

DATE COLLECTED: 09/26/95

DATE RECEIVED: 09/26/95 15:44

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u> | <u>ANALYST</u> |
|-----------------------|---------------------------|----------------|----------------|
| TOTAL ANTIMONY        | SW-846 7041               | <0.0012        | mg/L           |
| TOTAL ARSENIC         | SW-846 7060               | 0.0008         | mg/L           |
| TOTAL BERYLLIUM       | SW-846 6010A              | <0.005         | mg/L           |
| TOTAL CADMIUM         | SW-846 6010A              | <0.005         | mg/L           |
| TOTAL CHROMIUM        | SW-846 6010A              | <0.010         | mg/L           |
| TOTAL COPPER          | SW-846 6010A              | <0.025         | mg/L           |
| TOTAL LEAD            | SW-846 7421               | 0.00120        | mg/L           |
| TOTAL MERCURY         | SW-846 7470A              | <0.0002        | mg/L           |
| TOTAL NICKEL          | SW-846 6010A              | <0.040         | mg/L           |
| TOTAL SELENIUM        | SW-846 7740               | 0.00370        | mg/L           |
| TOTAL SILVER          | SW-846 6010A              | <0.010         | mg/L           |
| TOTAL THALLIUM        | SW-846 7841               | <0.0010        | mg/L           |
| TOTAL ZINC            | SW-846 6010A              | <0.020         | mg/L           |

Woodward-Clyde Consultants  
2318 Millpark Drive  
Maryland Heights, Mo. 63043

ATTN: Melissa Moore

INVOICE: 34119

PO: ---

PROJECT NO: GRANITE CITY NL/TARACORP

# ENVIRONMETRICS

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

## ANALYSIS RESULTS

SAMPLE ID: WW1443-1  
LAB ID: 9509000425-001  
DATE COLLECTED: 09/26/95  
DATE RECEIVED: 09/26/95 15:44

| <u>TEST PERFORMED</u> | <u>METHOD OF ANALYSIS</u> | <u>RESULTS</u> | <u>ANALYST</u>       |
|-----------------------|---------------------------|----------------|----------------------|
| TOTAL ANTIMONY        | SW-846 7041               | 0.0015         | mg/L 4 10/05/95 B.C. |
| TOTAL ARSENIC         | SW-846 7060               | 0.0023         | mg/L                 |
| TOTAL BERYLLIUM       | SW-846 6010A              | <0.005         | mg/L                 |
| TOTAL CADMIUM         | SW-846 6010A              | <0.005         | mg/L                 |
| TOTAL CHROMIUM        | SW-846 6010A              | <0.010         | mg/L                 |
| TOTAL COPPER          | SW-846 6010A              | <0.025         | mg/L                 |
| TOTAL LEAD            | SW-846 7421               | 0.00500        | mg/L                 |
| TOTAL MERCURY         | SW-846 7470A              | <0.0002        | mg/L                 |
| TOTAL NICKEL          | SW-846 6010A              | <0.040         | mg/L                 |
| TOTAL SELENIUM        | SW-846 7740               | 0.00210        | mg/L                 |
| TOTAL SILVER          | SW-846 6010A              | <0.010         | mg/L                 |
| TOTAL THALLIUM        | SW-846 7841               | 0.00110        | mg/L                 |
| TOTAL ZINC            | SW-846 6010A              | <0.020         | mg/L                 |

WOODWARD-CLYDE CONSULTANTS  
2318 MILLPARK DRIVE  
MARYLAND HEIGHTS, MO 63043

**ENVIRONMETRICS**  
2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

ATTN: MELISSA MOORE

INVOICE # 34119  
PROJECT # GRANITE CITY NL/TARACORP

**PREPARATION BLANK**  
**ICP/AA**  
**(UNITS = mg/l)**

PREP. CODE: MP-252-123

PREP. DATE: 9/27/95

| <u>ELEMENT</u> | <u>BLANK RESULT</u> |
|----------------|---------------------|
| BERYLLIUM      | -0.0004 - 0.005 u   |
| CADMUM         | <0.005              |
| CHROMIUM       | <0.009              |
| COPPER         | <0.006              |
| MERCURY        | <0.0002             |
| NICKEL         | <0.010              |
| SILVER         | <0.005              |
| ZINC           | <0.004              |

**LABORATORY CONTROL SAMPLE**  
**ICP/AA**  
**(UNITS = mg/l)**

PREP. CODE: MP-252-123

PREP. DATE: 9/27/95

| <u>ELEMENT</u> | <u>VALUE</u> | <u>RESULT</u> | <u>PERCENT RECOVERY</u> |
|----------------|--------------|---------------|-------------------------|
| BERYLLIUM      | 0.50         | 0.457         | 91                      |
| CADMUM         | 0.50         | 0.477         | 95                      |
| CHROMIUM       | 0.50         | 0.473         | 95                      |
| COPPER         | 0.50         | 0.471         | 94                      |
| MERCURY        | 0.002        | 0.00197       | 98                      |
| NICKEL         | 0.50         | 0.453         | 91                      |
| SILVER         | 0.50         | 0.463         | 93                      |
| ZINC           | 0.50         | 0.468         | 94                      |

**ENVIRONMETRICS**

WOODWARD-CLYDE CONSULTANTS  
2318 MILLPARK DRIVE  
MARYLAND HEIGHTS, MO 63043

2345 Millpark Drive  
Maryland Heights, MO 63043-3529  
(314) 427-0550

ATTN: MELISSA MOORE

INVOICE # 34119  
PROJECT # GRANITE CITY NL/TARACORP

PREPARATION BLANK  
GRAPHITE FURNACE ATOMIC ABSORPTION  
(UNITS = mg/l)

PREP. CODE: MP-195-69

PREP. DATE: 9/26/95

| <u>ELEMENT</u> | <u>BLANK RESULT</u> |
|----------------|---------------------|
| ANTIMONY       | 0.0080              |
| ARSENIC        | <0.0004             |
| LEAD           | <0.0013             |
| SELENIUM       | 0.0004              |
| THALLIUM       | <0.0010             |

LABORATORY CONTROL SAMPLE  
GRAPHITE FURNACE ATOMIC ABSORPTION  
(UNITS = mg/l)

PREP. CODE: MP-195-69

PREP. DATE: 9/26/95

| <u>ELEMENT</u> | <u>VALUE</u> | <u>RESULT</u> | <u>PERCENT RECOVERY</u> |
|----------------|--------------|---------------|-------------------------|
| ANTIMONY       | 0.100        | 0.1111        | 111                     |
| ARSENIC        | 0.050        | 0.0574        | 115                     |
| LEAD           | 0.020        | 0.0225        | 112                     |
| SELENIUM       | 0.025        | 0.0288        | 115                     |
| THALLIUM       | 0.050        | 0.0526        | 105                     |

CHAIN OF CUSTODY RECORD

SHEET \_\_\_ of \_\_\_

WOODWARD-CLYDE CONSULTANTS  
 2318 MILLPARK DR.  
 MARYLAND HEIGHTS, MISSOURI 63043  
 314-429-0100

| PROJECT NO:                  |      | PROJECT NAME:           | NO. OF CONTAINERS | CONTAINER DESCRIPTION / ANALYSES REQUESTED |                                       |                          |             |  | REMARKS                 |  |
|------------------------------|------|-------------------------|-------------------|--|---------------------------------------|--------------------------|-------------|--|-------------------------|--|
|                              |      | Granite City NLTARACORP |                   |  | TALL LIGHT<br>BLACK<br>C1-C4<br>AS-T3 | SPLASH<br>C1-C4<br>AS-T3 |             |  |                         |  |
| SAMPLER'S: (Signature)       |      |                         |                   |  |                                       |                          |             |  |                         |  |
| DATE                         | TIME | SAMPLE I.D. NUMBER      |                   |  |                                       |                          |             |  |                         |  |
| 9-26-95                      | 1325 | WW1443-1                | 1                 | X  |                                       |                          |             |  |                         |  |
| 9-26-95                      | 1350 | WW1443-2                | 1                 | X  |                                       |                          |             |  | Per conv w/melissa      |  |
|                              |      |                         |                   |  |                                       |                          |             |  | go off taracor          |  |
|                              |      |                         |                   |  |                                       |                          |             |  | list from previous jobs |  |
|                              |      |                         |                   |  |                                       |                          |             |  | (@ 9/26/95)             |  |
|                              |      |                         |                   |  |                                       |                          |             |  | Quote K1514             |  |
| RELINQUISHED BY: (Signature) |      |                         | DATE / TIME       | RECEIVED BY: (Signature)                   |                                       |                          | DATE / TIME |  |                         |  |
| Melissa Moore                |      |                         | 9/26/95           | P Woods 9/26/95                            |                                       |                          | 3:00 pm     |  |                         |  |
| RELINQUISHED BY: (Signature) |      |                         | DATE / TIME       | RECEIVED AT LAB BY: (Signature)            |                                       |                          | DATE / TIME |  |                         |  |
| METHOD OF SHIPMENT:          |      |                         |                   | AIRBILL NO:                                |                                       |                          |             |  |                         |  |

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 1

COC : 010370

Woodward-Clyde Consultants - W088  
 2318 Millpark Drive  
 Maryland Heights, Mo. 63043  
 Melissa Moore

Date Received: 09/26/95

Date Logged: 09/26/95

Status: Normal/LEVEL 5

Date Due (PM): 10/06/95 Proj #: GRANITE CITY NL/TARACORP

Date Due (Client): 10/10/95 P.O. #:

Mode: Mail Quot #:

| <u>Sample Id. No.</u>      | <u>Client Sample Name/Number</u> | <u>Matrix</u> | <u>Container</u>  | <u>Preservative</u> | <u>Date Collected</u> | <u>Temp Tests</u>   |
|----------------------------|----------------------------------|---------------|-------------------|---------------------|-----------------------|---|
| 25097<br>9509000425-001-01 | WW1443-1                         | WASTE WATER   | 1-1 LITER PLASTIC | Nitric Acid         | 09/26/95              | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>PREPARATION,WATER, (Total)-SW-846 3010A<br>PREPARATION,WATER, (Total)-SW-846 3020<br>TOTAL CADMIUM-SW-846 6010A<br>TOTAL CHROMIUM-SW-846 6010A<br>TOTAL SILVER-SW-846 6010A<br>TOTAL MERCURY-SW-846 7470A<br>TOTAL NICKEL-SW-846 6010A<br>TOTAL COPPER-SW-846 6010A<br>TOTAL BERYLLIUM-SW-846 6010A<br>TOTAL ZINC-SW-846 6010A |
| 25098<br>9509000425-002-02 | WW1443-2                         | WASTE WATER   | 1-1 LITER PLASTIC | Nitric Acid         | 09/26/95              | TOTAL ANTIMONY-SW-846 7041<br>TOTAL ARSENIC-SW-846 7060<br>LEAD-SW-846 7421<br>SELENIUM-SW-846 7740<br>THALLIUM-SW-846 7841<br>PREPARATION,WATER, (Total)-SW-846 3010A<br>PREPARATION,WATER, (Total)-SW-846 3020<br>TOTAL CADMIUM-SW-846 6010A<br>TOTAL CHROMIUM-SW-846 6010A<br>TOTAL SILVER-SW-846 6010A<br>TOTAL MERCURY-SW-846 7470A<br>TOTAL NICKEL-SW-846 6010A<br>TOTAL COPPER-SW-846 6010A<br>TOTAL BERYLLIUM-SW-846 6010A<br>TOTAL ZINC-SW-846 6010A |

Sample Instructions:

Sample Instructions:

|                               |                        |                         |  |   |                         |                         |
|-------------------------------|------------------------|-------------------------|--|---|-------------------------|-------------------------|
| <u>Items Transferred</u><br>2 | <u>Relinquished By</u> | <u>Date</u><br>09/26/95 | <u>PM Signature:</u><br>Anne Arnold<br>Client Services Rep.<br><i>KE</i><br><i>Anne Arnold</i> | <u>Logged In By</u><br>Phyllis Woods<br>Login Coordinator | <u>Date</u><br>09/26/95 | <u>Time</u><br>15:44:56 |
|-------------------------------|------------------------|-------------------------|--|---|-------------------------|-------------------------|

Please Note Attached Sheet w/ special Detection limits  
*(KE)*

coc : 010370  
Woodward-Clyde Consultants - W088  
2318 Millpark Drive  
Maryland Heights, Mo. 63043  
Melissa Moore

**INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST**

Page 1

Date Received: 09/26/95

Date Logged: 09/26/95<sup>TM</sup>

Status: Normal / LEVEL 5

Date Due (PM): 10/06/95 Proj #: GRANITE CITY NL/TARACORP  
Date Due (Client): 10/10/95 P.O. #:  
Mode: Mail Quot #:

INVOICE NUMBER: 0034119-IN

WOODWARD-CLYDE CONSULTANTS  
ACCOUNTS PAYABLE  
2318 MILLPARK DRIVE  
MARYLAND HEIGHTS MO 63043-

INVOICE DATE: 10/09/95

CUSTOMER NO: W088

CUSTOMER P.O.: N/L TARACORP

COMMENTS:

ATTN: MELISSA MOORE

TERMS:

DUE UPON RECEIPT

| SALES CD DESCRIPTION |                     | QUANTITY | PRICE  | AMOUNT |
|----------------------|---------------------|----------|--------|--------|
| W080N                | MERCURY, COLD VAPOR | EACH     | 2.000  | 20.000 |
| W085N                | METALS, ICP         | EACH     | 14.000 | 10.000 |
| W095N                | METALS, GFAA        | EACH     | 10.000 | 20.000 |

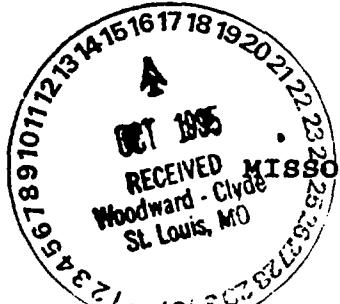
LAB #9509/425

**COPY**

NET INVOICE: 380.00

INVOICE TOTAL: 380.00

# **ATTACHMENT 2**



DEPARTMENT OF THE ARMY  
MISSOURI RIVER DIVISION, CORPS OF ENGINEERS  
DIVISION LABORATORY  
OMAHA, NEBRASKA 68102

11 OCT 1995

**Subject:** Chemical Quality Assurance Report

**Project:** N L Industries - Taracorp - 4th Qtr 95 GW Sampling, IL

**Intended Use:** Superfund Pre-Design

**Source of Material:** \_\_\_\_\_

**Submitted by:** Gene Liu, CEMRO-ED-ED

**Date Sampled:** 15 Jun 95, **Date Received:** 16 Jun 95

**Method of Test or Specification:** See attached tables 001 - 005.

**References:** Omaha District Request No. ENE 2688 dated 13 Nov 91

-- REMARKS --

1. **CONTRACTOR DATA EVALUATION:** The contract laboratory (Environmetrics Laboratory of St. Louis, MO) performed the analyses using EPA methods. Proper quality control procedures were followed and documented. The data package met the USACE HTW minimum chemistry reporting requirements as specified in ER 1110-1-263 (dated 1 Oct 90).

This report is a review of the Contractor's data associated with the five split samples received by MRD Laboratory. The samples were analyzed for metals (beryllium, cadmium, chromium, copper, nickel, silver, and zinc by EPA method 6010; antimony by EPA method 7041, arsenic by EPA method 7060, lead by EPA method 7421, mercury by EPA method 7470, selenium by EPA method 7740, and thallium by EPA method 7841.

- a. **ACCURACY:** Factors indicating the accuracy of the Contractor's data include:
  - 1) Matrix spike/matrix spike duplicate (MS/MSD) recoveries for metals were within acceptable limits except for selenium (142%, 141%, 71% and 61%) and antimony (70%) recoveries.
  - 2) Laboratory control sample (LCS) recoveries which for metals were within acceptable limits.
- b. **PRECISION:** Factors indicating the precision of the Contractor's data include:
  - 1) Relative percent differences (RPD) for MS/MSD which for metals were within acceptable limits.
  - 2) RPD for LCS which for metals were not reported.
  - 3) Laboratory duplicates which for metals were not reported.

8M for LP 10-5-95  
Percifield/glm/444-4313

- c. LABORATORY CONTAMINANTS: Half of the method blanks contained one or more of the following metals antimony (3.9-5.7  $\mu\text{g/L}$ ), lead (1.3  $\mu\text{g/L}$ ), selenium (1.2  $\mu\text{g/L}$ ) and zinc (21  $\mu\text{g/L}$ ).
  - d. HOLDING TIMES: Holding times were met.
2. QA/QC COMPARISON: Split and/or duplicate samples were submitted to MRD Laboratory for analysis. Comparison of the quality assurance (QA) and contractor test results are presented in tables 001-005. Data discrepancies were noted for the following sample pairs:
- a. Sample WMM108-DOGGWF vs. WMM108-DOGGWF (Table 003)
    - 1) Metals: a minor discrepancy in the values for selenium; and a major discrepancy in the values for zinc.

The major discrepancy for zinc could have been caused by a filtering problem.

3. OBSERVATIONS:

- a. Digestion dates were not reported in the data package.
- b. The following shipping and chain-of-custody errors were noted for the sample shipments received by MRD Laboratory:
  - 1) For the cooler that arrived on 16 Jun 95 some samples were not sealed in separate plastic bags.
  - 2) Sample WMM108-DOGGWQ for metals analysis was not preserved. This sample was preserved at the MRD Laboratory.

4. QUALITY ASSURANCE SUPPORT ACTION: Sample receipt was completed by the MRD Laboratory Project Manager in conjunction with the Omaha District. Copies of cooler receipt forms and custody papers were furnished to the Omaha District personnel on a daily basis.
5. SUMMARY: The data package submitted for this project met the USACE minimum chemistry data reporting requirements. The data packages were well organized and easy to follow.

The method quality control review indicated that the information provided supported the quality of the project data.

A data discrepancy was noted for one water sample. The data comparisons support the acceptability of the contract laboratory data.

Submitted by:

Douglas B. Taggart

DOUGLAS B. TAGGART  
Director, MRD Laboratory

**DEPARTMENT OF THE ARMY  
Missouri River Division, Corps of Engineers  
Division Laboratory  
Omaha, Nebraska**

**COMPARISON OF QA & CONTRACTOR RESULTS**

Project: N L Industries - Taracorp - 4TH Qtr 95 GW Sampling, IL  
 QA Sample ID.: WMW112-10GGWT Contractor's Sample ID.: WMW112-10GGWB  
 Material Description: Water Date Sampled: 15 Jun 95

| Analysis            | QA Lab Result | Contractor Result | Units | Analysis | QA Lab Result | Contractor Result | Units |
|---------------------|---------------|-------------------|-------|----------|---------------|-------------------|-------|
| <b>TOTAL METALS</b> |               |                   |       |          |               |                   |       |
| Antimony            | <50           | <1.2              | µg/L  | Lead     | <2            | <0.9              | µg/L  |
| Arsenic             | <2            | <0.4              | µg/L  | Mercury  | <0.2          | <0.2              | µg/L  |
| Beryllium           | <2            | <5                | µg/L  | Nickel   | <10           | <40               | µg/L  |
| Cadmium             | <4            | <5                | µg/L  | Selenium | <2            | 0.9               | µg/L  |
| Chromium            | <5            | <10               | µg/L  | Silver   | <5            | <10               | µg/L  |
| Copper              | <5            | <25               | µg/L  | Thallium | <2            | <1                | µg/L  |
|                     |               |                   |       | Zinc     | 7             | <20               | µg/L  |

Table 002

**COMPARISON OF QA & CONTRACTOR RESULTS**

Project: N L Industries - Taracorp - 4TH Qtr 95 GW Sampling, IL  
 QA Sample ID.: WMW108-DOGGWQ Contractor's Sample ID.: WMW108-DOGGW  
 Material Description: Water Date Sampled: 15 Jun 95

| Analysis            | QA Lab Result | Contractor Result | Units | Analysis | QA Lab Result | Contractor Result | Units |
|---------------------|---------------|-------------------|-------|----------|---------------|-------------------|-------|
| <b>TOTAL METALS</b> |               |                   |       |          |               |                   |       |
| Antimony            | <150          | <1.2              | µg/L  | Lead     | 2             | 1.10              | µg/L  |
| Arsenic             | 7             | 3.20              | µg/L  | Mercury  | <0.2          | <0.2              | µg/L  |
| Beryllium           | <6            | <5                | µg/L  | Nickel   | 164           | 137               | µg/L  |
| Cadmium             | 117           | 46.0              | µg/L  | Selenium | 2             | <0.8              | µg/L  |
| Chromium            | <15           | <10               | µg/L  | Silver   | <15           | <10               | µg/L  |
| Copper              | <15           | <25               | µg/L  | Thallium | <2            | <1.0              | µg/L  |
|                     |               |                   |       | Zinc     | 6080          | 4780              | µg/L  |

**COMMENTS:**

Data agreed.

Table 003

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**DEPARTMENT OF THE ARMY  
Missouri River Division, Corps of Engineers  
Division Laboratory  
Omaha, Nebraska**

## COMPARISON OF QA &amp; CONTRACTOR RESULTS

Project: N L Industries - Taracorp - 4TH Qtr 95 GW Sampling, IL  
 QA Sample ID.: WMM108-DOGGWF  
 Material Description: Water      Contractor's Sample ID.: WMM108-DOGGWF  
 Date Sampled: 15 Jun 95

| Analysis                | QA Lab Result | Contractor Result | Units | Analysis | QA Lab Result | Contractor Result | Units |
|-------------------------|---------------|-------------------|-------|----------|---------------|-------------------|-------|
| <b>DISSOLVED METALS</b> |               |                   |       |          |               |                   |       |
| Antimony                | <150          | <1.2              | µg/L  | Lead     | <2            | <0.9              | µg/L  |
| Arsenic                 | 5             | 2.80              | µg/L  | Mercury  | <0.2          | <0.2              | µg/L  |
| Beryllium               | <6            | <5                | µg/L  | Nickel   | 160           | 120               | µg/L  |
| Cadmium                 | <12           | <5                | µg/L  | Selenium | 3             | * <0.8            | µg/L  |
| Chromium                | <15           | <10               | µg/L  | Silver   | <15           | <10               | µg/L  |
| Copper                  | <15           | <25               | µg/L  | Thallium | <2            | <1.0              | µg/L  |
|                         |               |                   |       | Zinc     | <12           | ** 2300           | µg/L  |

Table 004

## COMPARISON OF QA &amp; CONTRACTOR RESULTS

Project: N L Industries - Taracorp - 4TH Qtr 95 GW Sampling, IL  
 QA Sample ID.: WMM104920GGW(Q,R,S)  
 Material Description: Water      Contractor's Sample ID.: WMM104920GGW  
 Date Sampled: 15 Jun 95

| Analysis            | QA Lab Result | Contractor Result | Units | Analysis | QA Lab Result | Contractor Result | Units |
|---------------------|---------------|-------------------|-------|----------|---------------|-------------------|-------|
| <b>TOTAL METALS</b> |               |                   |       |          |               |                   |       |
| Antimony            | <50           | 2.2               | µg/L  | Lead     | 259           | 186               | µg/L  |
| Arsenic             | 3             | 2.1               | µg/L  | Mercury  | <0.2          | <0.2              | µg/L  |
| Beryllium           | <2            | <5                | µg/L  | Nickel   | <10           | <40               | µg/L  |
| Cadmium             | <4            | <5                | µg/L  | Selenium | <2            | <0.8              | µg/L  |
| Chromium            | <5            | <10               | µg/L  | Silver   | <5            | <10               | µg/L  |
| Copper              | 5             | <25               | µg/L  | Thallium | <2            | <1.0              | µg/L  |
|                     |               |                   |       | Zinc     | 12            | <20               | µg/L  |

## COMMENTS:

\*: Data disagreement.

\*\*: Major data disagreement.

**DEPARTMENT OF THE ARMY  
Missouri River Division, Corps of Engineers  
Division Laboratory  
Omaha, Nebraska**

COMPARISON OF QA & CONTRACTOR RESULTS

Project: N L Industries - Taracorp - 4TH Qtr 95 GW Sampling, IL  
 QA Sample ID.: WMW104920GGWF Contractor's Sample ID.: WMW104920GGWF  
 Material Description: Water Date Sampled: 15 Jun 95

| Analysis                | QA Lab Result | Contractor Result | Units | Analysis | QA Lab Result | Contractor Result | Units |
|-------------------------|---------------|-------------------|-------|----------|---------------|-------------------|-------|
| <b>DISSOLVED METALS</b> |               |                   |       |          |               |                   |       |
| Antimony                | <50           | <1.2              | µg/L  | Lead     | 3             | 1.40              | µg/L  |
| Arsenic                 | <2            | 1.30              | µg/L  | Mercury  | <0.2          | <0.2              | µg/L  |
| Beryllium               | <2            | <5                | µg/L  | Nickel   | <10           | <40               | µg/L  |
| Cadmium                 | <4            | <5                | µg/L  | Selenium | <2            | <0.8              | µg/L  |
| Chromium                | <5            | <10               | µg/L  | Silver   | <5            | <10               | µg/L  |
| Copper                  | <5            | <25               | µg/L  | Thallium | <2            | <1                | µg/L  |
|                         |               |                   |       | Zinc     | 17            | <20               | µg/L  |

**COMMENTS:**

Data agreed.

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